

BRITISH PHARMACEUTICAL CONFERENCE.

SIXTH ANNUAL MEETING.—EXETER.

OFFICERS.

President :—D. HANBURY, F.R.S., F.L.S., etc., London.

Vice-Presidents who have filled the Office of President :—H. DEANE, F.L.S., Clapham Common; Professor BENTLEY, F.L.S., M.R.C.S., London.

Vice-Presidents :—W. W. STODDART, F.G.S., Bristol; J. INCE, F.L.S., F.C.S., etc., London; G. COOPER, Exeter; H. S. EVANS, F.C.S., London.

Treasurer :—H. B. BRADY, F.L.S., F.C.S., Newcastle-on-Tyne.

General Secretaries :—PROFESSOR ATTFIELD, Ph.D., F.C.S., London; R. REYNOLDS, F.C.S., Leeds.

Local Secretary :—MATTHEW HUSBAND, Exeter.

Committee :—J. H. ATHERTON, F.C.S., Nottingham; J. C. BROUCH, F.C.S., Kensington; A. J. CALEY, Norwich; M. CARTEIGHE, F.C.S., London; T. B. GROVES, F.C.S., Weymouth; J. PALK, Exeter; R. PARKINSON, Ph.D., Bradford; G. F. SCHACHT, Clifton; F. SUTTON, F.C.S., Norwich.

EXETER LOCAL COMMITTEE.

W. W. BROOM, W. H. BULLY, G. COOPER, R. DOWLING, J. HIBBERD, M. HUSBAND, J. KNAPMAN, J. H. LAKE, G. L. NAPIER, J. PALEK, F. W. STONE, N. W. TANNER, H. W. TIGHE, R. WALTON.

THE sittings of the British Pharmaceutical Conference for 1869 were held in the College Hall, Exeter, on Tuesday and Wednesday, the 17th and 18th ult., under the Presidency of Daniel Hanbury, F.R.S. The Bath Chemists' Association, the Leeds Chemists' Association, the Newcastle Chemical Society, the Chemists' Assistants' Association, and the Exeter Chemists' Association were represented by delegates. Communications were received from the North British Branch of the Pharmaceutical Society and from the Chemists' Associations of Birmingham, Lincoln, Manchester, Dundee, Halifax, Bradford, and Liverpool.

Among the members present were Messrs. Hanbury, Evans (President of the Pharmaceutical Society), Ince, Attfield, Brough, Carteighe, Andrews, Beynon, Bremridge, Coles, Francis, Grainger, Greenish, Hills, Martindale, Matthews, Morson, Pedler, Robbins, Westrupp and Wright, from London; Messrs. Cooper, Husband, J. Palk, Dowling, Hibberd, Knapman, Moody, Napier, W. Palk, and Walton, of Exeter; Messrs. Barnett and Commins, from Bath; Mr. Savage, from Brighton; Messrs. Stoddart, Hatch, Martin, and Mear, from Bristol; Mr. Schacht, from Clifton; Mr. Christopher, from Crickhowell; Mr. Radford, from Devonport; Professor Archer, from Edinburgh; Mr. Williamson, from Guildford; Messrs. Reynolds and Yewdall, from Leeds; Professor Calvert, from Manchester; Mr. Brady, from Newcastle; Mr. Taylor, from Oxford; Mr. Balkwill, from Plymouth; Mr. Collier, from Reading; Mr. B. Evans, from San Francisco; Mr. Manby, from Southampton; Mr. Kirkpatrick, from Taunton; Messrs. Guyer, Haarder, Narracott, and Smith, from Torquay; Mr. Payne, from Walsford; Mr. Groves, from Weymouth; Mr. Batting, from Wokingham.

One hundred and eleven new members of the Conference were elected at the sittings.

Professor ATTFIELD read the following

“REPORT OF THE EXECUTIVE COMMITTEE.”

The President and Executive Committee have again to congratulate the Members on the continued prosperity of the British Pharmaceutical Conference. At the last annual meeting the numbers enrolled amounted to 562; they now reach 647. From the statement of the Treasurer, it will be seen that the income is in excess of the expenditure by £50.

“During the past year your Committee has deliberated on the important question as to whether or not the compila-

tion and issue by the Conference of a ‘Year-Book’ or ‘Annual Report on the Progress of Pharmacy’ would be desirable and practicable. Similar works in connection with various sciences are published in most of the countries of Europe and in the United States, and are found to promote the advancement of knowledge, and to be highly useful to those amongst whom such books circulate. Indeed in England, in 1865 and 1866, a small ‘Year-Book of Pharmacy’ was issued by private enterprise, but its publication soon discontinued. Your Committee is of opinion that Great Britain should not be without such an annual report; and that, whilst the publication of the work would further the best interests of pharmacy and pharmacists, its issue would materially strengthen the position and increase the usefulness of the Conference. In support of this opinion your Committee has appointed a Sub-Committee to consider and report on the question in all its details, and trusts that the result will be communicated to the present meeting. With regard to the cost of publishing a year-book, your Committee is of opinion that it will only be necessary to represent to all engaged in the practice of pharmacy that by an annual member's subscription of five shillings they will receive a volume worth a larger sum, when an increase of funds will be obtained sufficient to cover all expenses.

In conclusion, your Committee views with much pleasure the cordiality with which the Conference has been invited to visit this western district of England, and trusts that the results of scientific and social intercourse here will be of commensurate value with those of any previous meeting.”

Mr. BRADY presented the following statement of accounts:

The Treasurer in Account with the British Pharmaceutical Conference, 1869—69.

	£ s. d.	Or	£ s. d.
To Cash in hand, Aug. '69	29 15 7	By General Printing —	
Sale of Proceedings	0 3 0	J. E. Taylor & Co. 12 2 0	
” 495 Subscriptions, viz.,		J. Bell 1 14 0	
6 for 1865-6			
56 for 1866-7			
111 for 1867-8			
208 for 1868-9			
21 for 1869-70			
3 for 1870-1			
2 for 1871-2			
Total 495.....	123 15 0		
		Cost of Proceeding —	13 16 0
		J. E. Taylor & Co.	24 10 0
		Contribution towards	
		the Expenses of the	
		Norwich Exhibition	
		6 for 1865-6	20 0 0
		Postage	9 6 6
		Stationery	2 19 6
		Carriage of Parcels	0 5 11
		Advertising	1 16 0
		Box for Conference	
		Papers	0 16 6
		Various Petty Expenses, including Cost of Directing Circum- lars, Newspapers, &c.	1 12 1
		Balance in hand	79 10 1
			£159 13 7

1869. August. Balance in hand 79 10 1

Subscriptions due (estimated)

—

11 for 1865-6

63 for 1866-7

99 for 1867-8

204 for 1868-9

Total 367.....

£91 15 0

Examined and found correct,

GEORGE CURRIT,

EDWARD ARNOLD, } Auditors.

NORWICH, August, 1869.

On the motion of Mr. PALK, seconded by Mr. HUSSAND, the Report was adopted.

Letters from the Secretaries of many provincial Associations and from various active members of the Conference unable to attend the sittings were acknowledged.

The PRESIDENT said that he had much pleasure in announcing that the President of the Pharmaceutical Society, Mr. Evans, and the excellent Registrar of that Society, Mr. Bremridge, were present. He then proceeded to read his Address, which we print entire.

OPENING ADDRESS.

BY DANIEL HANBURY, F.R.S.

Gentlemen.—The custom which has hitherto prevailed at the annual meeting of the British Pharmaceutical Conference imposes on the President for the time being the duty of initiating the proceedings by a few preliminary remarks, or as our secretaries are pleased to call it—an address. Properly to perform this duty is to me no easy task, but it would be still less so if I could not commence by congratula-

lating you on the growing usefulness and importance of our association. Last year we met in an eastern capital; our sixth anniversary brings us to the west of England to find in the good city of Exeter a welcome no less cordial and fraternal than we have experienced on any previous occasion. Had the Pharmaceutical Conference no other merits, we might say that at least it gave the opportunity for some agreeable relaxation,—an excuse for breaking away for a week or more from the routine occupations of business,—an occasion for visiting a locality which one might otherwise have no particular object for seeing, and of social and friendly intercourse, to which often attach the most pleasant recollections. But our Conference claims more than this; and the Report of our meeting last year at Norwich would prove, were it necessary, that the advancement of scientific pharmacy is one of the very principal objects with which our association is concerned.

On that occasion, it will be remembered, a portion of two sittings was occupied in a very animated discussion of the Pharmacy Act, then just passed, and in listening to an explanation of the new law, ably given by two members of the Conference who were particularly conversant with its provisions. It would be interesting to know what have been the experiences of our members as to the working of the Act in the practical carrying on of business. Has it proved a benefit and safeguard to the public? Have its provisions with regard to the sale of poisons been easily complied with, or have they been found irksome, or even impracticable? To these questions, it is to be expected, the answers will be very various, owing to the diverse character of the chemists' businesses on which the law will bear. Speaking from my own experience, I may say that in the city of London there has been very little difficulty in complying with the requirements of the Pharmacy Act, and that its tendency has been advantageous to public safety and convenience. On the subject of Registration and the other important provisions of the Act, I will now say nothing; but I must make a passing allusion to the very great stimulus to improved education which such a measure will infallibly prove. Its effects are already apparent: in no previous year have the laboratories at Bloomsbury-square been filled with more numerous and intelligent students; and though I know that some exception may be taken to one class of our examinations on the ground of their lenient character, it is no insignificant fact that 600 persons have passed these ordeals in the house of the Pharmaceutical Society during the first six months of the present year.

With regard to the sale of poisons, it is not a little remarkable that in this country no law should have been in force to restrain or regulate it, until the Arsenic Act was passed in the year 1851. Contrast this with the state of things in France, where so far back as A.D. 1353, nearly five hundred years before, a law was passed to regulate the profession of apothecary and herbalist, and to subject the shops of such persons to inspection. By this law it was enacted, "that they should not sell or deliver any dangerous poisonous medicine or such as would occasion abortion, whether simple or compound, to any person out of the pale of the Christian faith or to any person to have the same if they did not well know that he was a master, or learned person, or expert in the science of medicine and well known, the which they should judge in their conscience sufficient, that it was by express command of a physician who had sent for such medicines and as above is said * * * "

The necessity of subjecting a buyer to something like a theological examination may seem now-a-days rather un-practical, but not impossible, if intended, as I think it was, to be enforced against Jews who in the middle ages were

distinguished by their dress, and were, as is well known, the objects of every kind of persecution and opprobrious distinction. The same law contains other curious provisions, some of which descend to minute particulars, as the following:—

" * * * * and also that the medicinal electuaries, or opiates, or other medicines liable to be long kept, made and put into pots or other suitable vessels, shall be labelled with the year and month when concocted, and that they shall sell the same at a loyal, just, and moderate price, and with just regard to variation in the currency * * * * and also that whenever required, they shall weigh all their medicines and not deliver them by guess."

In the previous reign, that of Philippe de Valois, an injunction concerning the apothecaries of Paris was addressed by the king to the provost of the city, requiring that he should compel the apothecaries to show their medicines to the Masters of the Faculty of Medicine, that the latter might judge of their purity and good condition.*

In connexion with the Pharmacy Act, it is proper that I should here inform you that the proposal made at our meeting at Norwich last year for some public recognition of the eminent services rendered to the cause of pharmaceutical education and the improvement of the status of pharmacy, by Mr. Sandford, was warmly taken up at meetings held at the house of the Pharmaceutical Society on the 6th and 13th of October last, on the latter of which occasions a committee was organized for carrying it into effect. It is unnecessary that I should recount to you the subsequent proceedings and numerous meetings of this committee; suffice it to say that a subscription was raised, amounting to about £500, of which £200 invested in the form of plate, was presented to Mr. Sandford on the 19th of May last, on the evening of which day a complimentary dinner was given to him at the Freemasons' Tavern. The balance of the subscription is to be expended on a portrait of Mr. Sandford, to be placed on the walls of that institution for the welfare of which he has laboured with so much devotion and, I think I may add, with such eminent success.

The progress of scientific pharmacy as evidenced by the various memoirs, papers and notes that have appeared in this and other countries during the year that has elapsed

* These laws are thus quoted in the *Recueil Général des Anciennes Lois Françaises*, par Decrousy, Isambert et Jourdan, Tome iv., pp. 679-681 and p. 424.

"Ordonnance sur l'exercice de la profession d'apothicaire et d'herbier, et qui les soumet à la visite"—Paris, août, 1353.

"Jehan, par la grace de Dieu, roy de France; savoir faisons à tous présens et àvenir" et qu'il ne vendront, ne bâilleront aucune medecine venimeuse perilleuse, ou qui puissent faire abortiz, simples ou composées, à nulles gens, qui solent hors de la foy chrestienne, ni à aucunes gens avair si le connoiscent bien, que il soit maistre ou scientier, ou expert en la science de medecine, et bien cognu, lequel il cuideront en leur conscience souffrissant, que ce soit par expre commandement de physicien, qui les eut envoyé querir, et se comme dessus est dit * * * *

" * * * * et aussi que les medecines electuaries ou opiates, ou quelques medecines de longue conservation, faites et misées en pots, ou autres vaseaux convenables par eux, les mettront sur le pot, l'an et le mois de la confection, et que il vendront à loyal, juste et modér pris, et loyal et juste regard à la mutation de la monnoie * * * * et aussi que il peseront toutes leurs medecines, et ne les bâilleront pas en tache, toutefois que requis en seront."

" Mandement portant que les remèdes des apothicaires de Paris, seront visités par les médecins de la Faculté."

"Philippe par la grace de Dieu, roy de France: au prevost de Paris, ou son lieutenant, salut."

" * * * * et que telles les contraignez à montrer ausdits maistres [de la faculté de medecine] les medecines laxatives, et les opiates, qui se gardent par long temps, pour les voir, avant que elles soient confites, et savoir qu'elles soient bonnes et fraîches et non corrompus et trempées * * * *

"Donné à Paris le 22 de Mai 1362."

since our last meeting, is a subject too wide and too difficult for me to attempt to discuss on the present occasion. Yet it may be neither uninstructive nor uninteresting if I direct your attention to a very few of the numerous valuable communications on pharmaceutical subjects that have been brought forward during the last twelve months, though as I have hinted, it is impossible for me to offer any fair *résumé* of them in the few brief moments at my disposal.

First let me notice the continued labours of Mr. John Eliot Howard on the chemistry and physiology of Cinchona, of which good proof is presented in his recently published *Quinology of the East India Plantations*, a copy of which is on the table. In this fine work, the author discusses a variety of subjects connected with the culture of Cinchona in India, such as the acclimatization of the various species, the elevation above the sea-level at which the culture proves most successful, the effects of protecting with moss the stems from which the bark is renewed, the chemical constitution of the wood and leaves of Cinchona, etc. The so-called *mossing-process*, which, simple as it is, seems likely to play an important part in cinchona-culture, consists in covering with moss the portion of stem from which a strip of bark has been carefully removed.* The wood thus laid bare exudes a delicate cellular tissue, having the aspect of minute gelatinous drops, which gradually increasing and hardening, ultimately forms a continuous layer of new bark; and now comes the interesting fact that this new bark is richer in alkaloids than that which it replaced; and bark of the second renewal is richer than that of the first, and of the third than that of the second. "Is this state of things," says Mr. Howard, "to last and become permanent, so that by continually stripping the trees of portions of their external covering, it should become in the same proportion more rich in the very product that we need? This seems very improbable, yet it is the conclusion to be arrived at from the above experiments."

The increase of alkaloids, let me observe, is not trifling, but in extreme cases is almost double. It is also stated that bark the third time renewed is better fitted for the extraction of quinine than normal bark, and yields the alkaloid in a state in which its purification is singularly easy.

Mr. Broughton, whose assiduity in this field of research continues unabated, made experiments on two trees of *Cinchona succirubra* which showed that when the trunks were deprived of light for some months by being covered with tinned plate or black cloth, the amount of alkaloids increased more than 50 per cent.; the proportion of quinine, however, remained almost stationary, the increase being in the shape of cinchonine and cinchonidine. In bark renewed under moss, an improved proportion of quinine is found.

The cultivators of madder are in the habit of covering up with earth the lower portion of the stems of the plant, finding by experience that deprivation of light tends to develop the peculiar colouring matter, for which the plant is valued; and he has been able to prove by experiment that it is possible to change at discretion the production of chlorophylle and to cause the elaboration of the colouring matter of the root in its place. It happens in this case, observes Mr. Howard, that the green portions which, when exposed to light, absorb the carbonic acid of the air whilst disengaging oxygen, absorb, on the contrary, when deprived of light, the oxygen of the atmosphere which surrounds them and replace it with carbonic acid. Does not something analogous take place in the Red Bark tree, the shading of the stem of which is attended with such manifest advantage?

* The entire removal of the bark from a stem is a destructive practice never adopted in India.

In Mr. Broughton's *Report to the Madras Government*, the following interesting fact is related:—Among the Crown-bark trees (*Cinchona officinalis*, L.) raised from seeds collected by Mr. Cross, there were observed to be a few having narrow, lanceolate leaves, and a somewhat different aspect from their companions. A comparative analysis of the bark of these two forms of Cinchona (growing side by side and raised, as it would seem, from the same lot of seeds) afforded this interesting result,*—that that of the tree with lanceolate leaves contained 8 per cent., or nearly $\frac{3}{4}$ times as much alkaloids as that of the neighbouring trees of ordinary *Cinchona officinalis*; nine-tenths of these alkaloids being quinine, while in the others less than half was quinine. No finer quality of cinchona bark for the quinine manufacturer has probably ever been met with.

M. Lefort has rendered a good service by communicating to the Society of Pharmacy of Paris, the result of a comparative examination of the Ipecacuanha of Brazil and of that imported of late years from New Granada. It will be perfectly in the recollection of many of you that since about twenty years, the price of ipecacuanha has advanced 200 to 400 per cent., a circumstance due partly to the increasing rarity of the plant and the necessity of seeking it in regions more and more remote, and partly, it is said, to the stock of the drug being in few hands, and the trade being thus virtually something of a monopoly. This high price of the Brazilian ipecacuanha has naturally stimulated a search for the drug in other parts of tropical South America, and has led to its collection in New Granada. Yet the drug of New Granada is not precisely similar to that of Brazil, nor is its botanical origin well established;† and questions have been raised as to whether it may be legitimately employed, some authors supposing it to be weaker, others stronger than the indubitable ipecacuanha of Brazil. To determine the question of strength, M. Lefort has endeavoured to ascertain how the two drugs compare in their richness in emetine. Pelletier and Dumas having shown that emetine produces an almost insoluble precipitate with tannic acid, M. Lefort availed himself of this fact to determine the amount of precipitate obtainable by this reagent from the soluble matter of a given weight of root. The mean of his experiments showed Brazilian Ipecacuanha to yield 14·49 per mille of tannate of emetine, and New Granada Ipecacuanha 13·4 per mille. The curious fact that a nitrate of emetine is but very little soluble, though sulphate, hydrochlorate, phosphate, and acetate, are very soluble, afforded a means of checking these results, and warrant the conclusion that the Ipecacuanha of New Granada is rather less active than that of Brazil. A second paper by M. Lefort on the preparation, properties, and composition of emetine is well deserving the attention of those desirous of studying this alkaloid.

The indigenous plants of which the herbaceous parts are in common use in medicine in this country, are few in number, but important by reason of their potency as remedies. The

* Mr. Broughton's analysis of these barks may be thus stated:—

	Bark of tree with lanceolate leaves.	Bark of adjoining trees <i>Cinchona officinalis</i> .
Quinine	7·15	2·06
Cinchonine and Cinchonidine	0·85	2·42
Total of alkaloids per cent.	8·00	4·48

Sulphate of Quinine obtained crystallized 7·37 undetermined.

† The true Ipecacuanha-plant is not known to occur in New Granada; for although in the description of the plants collected by Humboldt and Bonpland, *Cephaelis Ipecacuanha* is enumerated as from the mountains of San Lucas, in New Granada (Kunth, *Synops Plantarum*, iii. 35), the indication must be regarded as doubtful. My friend M. Triana, himself an explorer of the country, has at my request sought for the San Lucas *Cephaelis* in the herbarium of Kunth, in Paris, but found that it does not contain any authentic specimen of that plant.

English druggist, unlike his Continental brother, has no large room to keep in order; and the drying of herbs which he may have to superintend, is generally performed on a very small scale, if at all. Yet when Henbane, Belladonna, Digitalis, or Conium, are required for making their respective tinctures, and the leaves have to be stripped from the stems and dried, the desirableness of such a process must have often seemed questionable. Such at least has been my feeling. I have wondered whether the henbane, with its leaves exuding a clammy secretion from every hair, and its heavy narcotic odour, can in nowise deteriorate by being subjected for hours to the heat of a drying stove? Whether conium, the active principle of which is a volatile liquid, loses none of its potency by a similar process? The same questions have occurred long ago to others, and the expressed juice of certain medicinal plants, preserved by the addition of alcohol, was recommended nearly thirty years ago by Mr. Edward Bentley and Mr. Squire.

The British Pharmacopœia has recognised the value of such medicines, and has given formulae for the preserved juices of Scoparium and of Conium, both excellent preparations, the latter especially being superior to any tincture prepared from a dry ingredient, whether leaf or fruit. It has been reserved, however, for a Belgian apothecary to investigate the subject in a thoroughly scientific manner, and to point out in what way and to what extent the dried medicinal plant differs from the fresh. The late Dr. Schoonbrodt, of Liège, has done this, and has published in the *Journal de Médecine de Bruxelles** the result of his researches on 29 different plants, concluding his essay with some general remarks, of which I may cite the following:—

That dried plants never completely represent the same plants when fresh. Nevertheless it is possible for new and useful constituents to be developed during the process of drying, as in the case of Valerian, which when fresh contains essential oil but no valerenic acid. This, however, is an exceptional instance, the reverse being much more frequent.

That plants suffer by drying two kinds of alteration;—firstly, the loss of a portion of their volatile constituents; and secondly, an oxidation of their fixed constituents and of the remainder of their volatile. This oxidation is, in the author's opinion, in great part due to the structure of the dry vegetable tissue, which in its porosity resembles spongy platinum or carbon, and perhaps partakes of some of the gas-condensing power of those substances. The result of this action exhibits itself very decidedly in the case of valerian: when fresh, it contains no valerenic acid but an oxygenated essential oil, which by the action of the air and alkalies, is slowly converted into valerenic acid. It also contains another volatile hydrocarbon, which resinifies very slowly in the air. By the act of drying, however, this formation of valerenic acid which even in the presence of an alkali is so slow, and this very tardy resinsification by exposure to the air, are very materially hastened. There is found, in fact, in dried valerian a comparatively large amount of ready-formed valerenic acid, the presence of which is evidenced by the strong smell of the drug, while the fresh root is devoid of odour and contains no resin.

The author further observes, that it is always advantageous in the preparation of alkaloids and other active principles to employ the fresh plants, and as far as possible to conduct the operations thereto belonging at a low temperature. Alkaloids are thereby obtained in a condition

more favourable to crystallization; the loss, often considerable, resulting from decolorizing by charcoal is avoided, and recourse to chemical reagents for their isolation, or rather to free them from the products of their own alteration, is dispensed with.

As to the drying of medicinal herbs, the author remarks that the oxidising influence of the air being the principal cause of deterioration, it is desirable that the operation should be performed as rapidly as possible, and that the herb should be compressed into a compact mass, after the manner pursued by the American herb-dryers.

The *Pharmaceutical Journal* for last September contained a warning regarding the purity of Aconitine, which has not received all the attention in this country that it seems to deserve. It was to this effect,—that English aconitine, or at all events a sample received from London as such by Mr. Merck, of Darmstadt, was found to possess chemical and physical characters very different from those recognised as proper to true aconitine. It was but slightly soluble in ether and much less soluble in alcohol than pure aconitine, and dissolved with difficulty in chloroform. In boiling water it did not become soft and plastic, but remained pulverulent; from boiling alcohol it could be readily crystallized. Notices contrasting so-called English and German aconitine have appeared in many of the Continental journals; and it seems to be accepted as a settled fact that in England, aconitine signifies something very different from what it does abroad. But so far as I have observed, this assumption is far too sweeping: at least I have found that aconitine in my possession manufactured in London by houses of repute (and what I examined had been purchased long before attention had been called to the subject) had precisely those properties which are characteristic of the true alkaloid. The chemistry of aconite, a most difficult subject, is now occupying the attention of some of our best pharmacologists, and their labours cannot fail to make plain some points in its history hitherto obscure.

In the suggestive list of Subjects for Papers which our secretaries do not fail annually to bring before us, there has been for years included a catalogue of vegetable alkaloids, each of which for one or several reasons requires further investigation. One of these, *Buxine*, is the subject of a very interesting memoir by our esteemed member Dr. Flückiger, an abstract of which with some new matter he has been good enough to prepare for our meeting. I shall be glad if some other of our members will undertake to reduce this list.

The adulteration of olive oil is a subject that has often claimed the attention of chemists, and the diversity of the tests proposed indicates how difficult it is to detect the sophistication of this important production. The increase in the manufacture of soap in some of the cities of Southern Europe has led to the importation of a variety of oils and oil-seeds, which have presented strong temptations to tamper with the oil shipped as olive oil to foreign countries. For the benefit of any of our members who may feel disposed to work on such a subject, I may mention that a prize of £600 is offered by the Chamber of Commerce of the Department of the Alpes Maritimes for a prompt and easy method, not involving a chemical process, of recognising the mixture of seed-oils with olive-oil.

Our indefatigable colleague, Dr. Attfield, has, during the past year, communicated many practical and useful observations on pharmaceutical subjects, one of which I will here briefly recall to your memory.

Precipitated Sulphur.—Notwithstanding that attention has been repeatedly called to the desirableness of supplying this drug in a pure form, it appears that the calcareous milk of sulphur, consisting of about 34 per cent. of sulphur with

Vol. 45 (1867), p. 162, etc.; Vol. 46 (1868), p. 62. A German translation as appeared in the *Vierteljahrsschrift f. Prakt. Pharm.* 1869, p. 73, and *Ann. und Proc.*

66 per cent. of sulphate of lime, is still very generally sold. In justification, it is said that the public prefer the impure article, as being whiter, and more easily miscible with water, that it is the true *Lac Sulphuris* of the Pharmacopœia, *sulphur precipitatum* being a distinct preparation;* to which I may add another consideration (too far fetched, let us hope, to be real), that the first is but half the price of the second. It is hard to combat popular prejudice, and sometimes impossible for a druggist to convince his customer that one article is less adapted to his requirements than another. I have heard a person require the rankest and most offensive cod-liver oil in preference to what was sweet and new; and have even known an ointment that was old and rancid habitually preferred to that which was freshly made. Yet in proportion to the amount of confidence reposed in the knowledge, skill, and fidelity of the druggist, so will the public accept his judgment in matters pertaining to his own art; and even a druggist's dictum, that pure sulphur is better than sulphur and plaster of paris, will come to be admitted as reasonable.

Our art, gentlemen, is ever progressive. All science is interesting for us, since almost every scientific discovery may sooner or later, directly or indirectly, yield some result profitable to pharmacy. Let us not, therefore, neglect our opportunities; but, identifying ourselves with the general advancement of knowledge, let us strive to improve by every means in our power that branch of the healing art which it is our province to cultivate.

Mr. COOPER (Exeter) moved that the best thanks of the meeting be presented to the President for his admirable address, and gracefully referred to the author's important contributions to pharmacy.

Mr. BEVANS (San Francisco) seconded the resolution, which was carried by acclamation.

The PRESIDENT having acknowledged the vote, the reading of papers was proceeded with.

ON PHARMACEUTICAL RESPONSIBILITY AND REMUNERATION. BY MR. EDWARD SMITH, TORQUAY.

At the last meeting of the Pharmaceutical Conference, at Norwich, a letter was read from Mr. R. W. Giles "On the Relation of Remuneration to Pharmaceutical Responsibility."

As the subject matter of that letter has hardly received the consideration it well deserved, I venture to bring it again before your notice at this meeting.

The gist of Mr. Giles's letter was that, considering the responsibility necessarily attendant upon our business, and the anxious care and constant application required to carry it on successfully, the remuneration attached to it is such as will not "afford to the industrious pharmacist a reasonable prospect of providing for his latter days without the aid of the Benevolent Fund."

With this, and, indeed, with everything advanced by Mr. Giles, I heartily agree; nevertheless, it is a melancholy picture to present to those just entering the business; those already engaged in the struggle know full well how great is the truth of the remark. The reflection that we are ourselves the cause of this great evil not only makes our position the more humiliating, but upon the majority of our brethren seems to have a very depressing effect, deterring them apparently from struggling and fighting for better things. I do indeed hope and believe there is sufficient *verbis* and "Geist" in our body to enable us as a body to take and maintain a higher position. The public and the Legislature are gradually, but persistently, asking from us higher and higher qualifications, and for this higher status we must make ourselves in every way fitted. As a compensation, we

ought gradually to expand our ideas of what constitutes fair and honourable remuneration.

Two powerful and sometimes antagonistic influences pervade the pharmaceutical mind—there is the commercial spirit and the professional spirit. A mind well balanced, that is, in which neither the one interest nor the other preponderates, is best calculated at once to advance its owner's material and social position. We see the effect of an undue excess of the commercial spirit in those suicidal cases of cutting down prices too frequent amongst a certain class of pharmacists. The desire to increase the funds of the exchequer is undoubtedly in itself very natural, and one to be commended; but this desire should always be controlled and leavened, and toned down by a feeling of professional responsibility; and if this responsibility were once realized, the danger of low prices would very soon fade away. The public, as a rule, do not ask for and do not want cheap physic. If the pharmacist would only take his better feelings into confidence, we should hear no more of starving prices, unseemly jealousies, and selfishness, for, after all, selfishness is at the bottom of all price-cutting. On the other hand, if the professional spirit outweighs all other considerations, we find one of those painful cases in which the individual feels himself so far above, and out of the pale of ordinary commercial transactions, that disappointment and failure are merely questions of time. We find this man continually chafing and mortifying himself, constantly complaining of his business, finding fault with everybody and everything around him, unsettled in his mind, because he thinks it very much *infra dig.* to sell twopenny-worth of rhubarb, or spread a threepenny plaster. He has entered what he thought a profession, and finds it, if I may use the expression, a professional trade.

Pharmacy, as a trade, is surrounded by responsibilities which do not obtain in any other business, and which the public have not altogether as yet appreciated, because the pharmacist himself has not sufficiently considered the nature of his calling, nor valued in a just manner the intellectual ability required of him over and above that which is necessary to the carrying on of an ordinary business.

It may be said, however, "It's all very well to tell us we are not fairly paid, and so on; we are very willing to receive more for our services, but how is it to be done? How do you propose to improve our pecuniary position?"

Well, this I believe to be a far easier matter than is generally suspected. The one great thing necessary is, that all petty jealousies and underhand rivalry amongst neighbours should be eliminated from our minds, and discouraged in every possible way; we should strive rather to promote and acquire a feeling of confidence in each other.

Mr. Giles struck the right chord when he said "our scale of charges should be regulated by the number of doses." I have long advocated this principle, which I believe to be the only fair one. Oftentimes it is merely the momentary whim of the prescriber whether we have a mixture of six doses, or double the materials in the same bottle in twelve doses. Now, if the first be charged eighteenpence, it is manifestly unfair to charge the second the same price, or a few pence more, and yet this is frequently and habitually done. If we adopt the plan of charging per dose, we become perfectly independent, as far as profit is concerned, whether the physician orders his medicine to be taken by drops or by bucketfuls; and nothing would give a more deadly blow to the modern system of concentrated medicines which is adopted, so says the *British Medical Journal*, "chiefly with a view to economy for the patient, who gets more for his money." But, surely, if the patient desires economy, it would be far more honourable to allow the pharmacist to prove his liberality by charging a nominal price to patients who are not in a position to pay regular prices than coerce him, through the medium of a prescription, to do that grudgingly which would be otherwise a source of pleasure to him. I think I may confidently appeal to the general body of pharmacists to bear me out in this, that we do repeatedly make, and are in the habit of making, allowances in charging medicines to those who we believe or know are not in position to pay the usual and legitimate charges.

Of course, no plan can ever create a universal tariff for all drugs and medicines. As for the retail, that being essentially the trade part of the business, must be guided by purely trade considerations, and these are regulated by

* It is true that the *Sulphur precipitatum* of the Pharmacopœia of 1746 was ordered to be made with sulphur, lime, and sulphuric acid; and the *Lac Sulphuris* of that of 1721 with sulphur, lime, or salt of tartar, and sulphuric acid. But it is questionable if the chemists of that period were aware of the essential difference of the products obtained, according to whether a lime or a potash-salt were decomposed with sulphuric acid, for Pemberton, in his *Dispensatory* (1746), calls the preparations "similar," but says that the one "will not look so white" as the other.

so many distinct and different circumstances that it is certain nothing satisfactory could be done.

With regard to the charges on prescriptions, the great historic houses will always be able to obtain any price they think fit to ask. The less fortunate houses must follow them as closely as circumstances will allow. No regulation will ever equalize, in every case, the London and provincial charges, nor, indeed, can even London prices themselves be equalized. A long stride in this direction may be made if the pharmacists in each locality or town will agree to a standard of prices, below which they will pledge themselves not to go. Each locality, whether London or provincial, knows best its own capabilities, and if those in each district would only do their best for the common good of all, the natural tendency of things would be to place us in a position to obtain very much better prices.

But in order to do this, it is absolutely necessary that we should have confidence in each other. It is that much-to-be-regretted feeling of jealousy that mars all our attempts to improve our prospects. Why this is so it is difficult to explain,—but so it is, and this to an extent unknown in any other business. We see, on the one side, how the bakers, grocers, drapers, and others meet together, agree upon prices, and, what is more to the point, stick to their agreement. On the other side, we see in the pharmaceutical ranks disunion, and neighbour arrayed against neighbour. I have known men who have lived in the same town, nay, in the same street, for years together, without so much as speaking, even meeting in a common assembly, and simply casting a furtive and suspicious glance at each other, evidently impressed with the notion that each one regarded the other as an interloper, a rival, one to be avoided at all hazards. The new Pharmacy Act has put us all in the same boat, and this is just the time to make a radical change in our manners, or, at any rate, to make a vigorous attempt to do so. The Pharmaceutical Society has already done wonders in this direction in a general way, but its ramifications and influence have not been sufficiently felt in the provinces. The local secretary of the Society in every place should consider it a part of his duty to bring about a better feeling; he should institute occasional meetings to discuss and chat over, in a friendly way, little business matters that from time to time are continually cropping up; and it is astonishing how much we may influence each other, almost without knowing it, smoothing down those angular peculiarities we all possess. For this reason the Society should be especially careful in its appointment of a local secretary. A post of so much power for good or evil ought not to be lightly given up to the first man who holds up his hands. In most places there is usually some one who, by common consent, is considered the leader or father of the profession, and he is precisely the one who should be induced to undertake the post. In large towns it might be desirable to appoint one or more sub-secretaries or district secretaries, whose business would be to take the initiative in promoting friendly meetings, as before suggested, in their several districts. Without some such leader, I fear it would be quite hopeless to expect any particular individual to take the matter upon himself.

Another great help would be the adoption by all of a general price-mark, so that all prescriptions when first dispensed may be so marked that every succeeding dispenser would be enabled to charge precisely the same. If this were faithfully carried out, and doubtless it would be by all respectable men, it would go far towards allaying the popular feeling, caused by ever-varying charges, that the cost of physic is so little as to be difficult to charge at all, the limit being the conscience of the dispenser. Now-a-days prescriptions travel with rapidity from one end of the country to another; a prescription may be dispensed to-day in Edinburgh and to-morrow in London. This, so long as a difference existed between the two Pharmacopœias, led not only to much inconvenience, but paved the way to something positively dangerous. To this fact are we mainly indebted for the British Pharmacopœia; and, for a very analogous reason, we shall eventually be compelled to do away with much of the discrepancy in charges. It is extremely discreditable to us that one and the same medicine is liable to be charged half-a-dozen prices, in as many Pharmacies. A general marking of prescriptions would very often prevent this.

In my own business we are daily called upon to dispense medicines, previously had in some London West-End house. We find no price-mark, consequently being quite in the dark as to the previous charge, we can only go at it haphazard, the chances being greatly against our hitting the right figure. Well, the result of this is, that if our medicine is, as it ought to be and as I believe it is, precisely the same as the great house, our charge, if below theirs, must cause a feeling of something akin to unfairness on the part of the London house, and any material difference cannot but cause reflections anything but creditable to the practice of Pharmacy.

To sum up concisely, the present remuneration of pharmacists is wretchedly inadequate, and in no way represents an equivalent for the educational, intellectual, and other demands made upon them. This state of things is owing in a great measure to their own internal jealousies, and senseless rivalries, and can only be remedied by local and general combinations by mutual concession and more liberal notions of each other, and by more social and friendly intercourse with each other.

Nothing remains for me but to urge the leading houses, throughout the country, earnestly to take the matter in hand. Let them mark the charge on every prescription and let it be a remunerative one.

Manchester and several other towns have already made an advance in this direction, but these isolated cases, although very good in themselves, require and deserve the sustained support of every pharmacist in the country, and for this reason I venture to ask the members of this Conference, individually and collectively, to give a helping hand to so desirable an object, and thus assist in lifting up their profession to that status in the social scale it has a right to occupy, and to which its responsibilities and educational requirements fully entitle it.

An interesting discussion upon the subject of prices followed the reading of this paper.

The PRESIDENT contended that the charges made by pharmacists ought to yield proper remuneration for the time and skill employed in dispensing. The charge made for a little arsenic and water was in fact a fee. He had always found his brother chemists in London willing to furnish him with full information respecting their charges.

Mr. STODDART (Bristol) said that his own experience went to show that the sale of a medicine was not increased by lowering its price. When a prescription which had previously been prepared by a "cutting" chemist was brought to him, he told the patient what the proper charge for it would be. Almost invariably he was requested to prepare the prescription, and he found that the customer generally came again.

Mr. BALWILL (Plymouth) said that many of the chemists of Plymouth had agreed upon a price-mark, and had used it on prescriptions with mutual advantage. When any one violated the agreement, the price-mark was altered.

Mr. BRADY (Newcastle-on-Tyne) referred to the Edinburgh price-list which had become a standard for an extensive district. The scale of prices was thought by many to be unnecessarily low; and he hoped it was correctly rumoured that it was likely to be raised. There was a mitigating circumstance in the fact that medical men in Edinburgh did not dispense their own prescriptions, and that the chemists consequently received a large number.

Mr. SAVAGE (Brighton), called attention to the gratuitous distribution of medicines at hospitals to persons quite able to pay for them, and instanced a case at the Sussex County Hospital, where a clergyman and his wife and daughter had received medicines gratuitously.

Mr. CARTERIDGE advocated the system of charging by the dose.

Mr. REYNOLDS (Leeds), agreed with the author of the paper, that pill making was a most unprofitable duty owing to the time it occupied and the small sum received for each dose. The quantity of pills used by patients was much less than formerly, whilst the trouble of preparing a small number of pills was not diminished. If it was not possible at once to achieve the whole of the reforms of prices which had been indicated, there was no reason why they should not reform the most glaring fault of their system, viz. the prices charged for pills. This might be done in every town.

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Messrs. Schacht, Cooper, Payne, Commins, Knapman, Manby, and Radford, contributed some interesting remarks on the topics raised by the paper.

Mr. SMITH in replying to the various speakers, remarked that he did not wish to equalise prices, but he did wish to raise to a higher standard those that were too low. The chemists of watering-places, like Torquay, were in a worse position than those of the towns were their customers permanently resided, because they had so many prescriptions written by physicians whom they did not know. A general price-mark would therefore be of especial use to them. The public complained more at being charged irregular and inconsistent prices than they did because of prices being too high. He especially urged that independently of combination as to price, every one who dispensed a prescription should mark upon it the price charged.

ON SYRUP OF IODIDE OF IRON. BY M. CARTEIGHE, F.C.S.
(Abstract.)

The simple experiments recorded in this paper were made with a view of clearing up, if possible, the discrepancies of various published observations on the preparation and preservation of this important and elegant medicine. Mr. T. H. Holloway, of Sydenham, had stated that the syrup would keep well if it were exposed in a window for a few hours daily to the direct action of the sun, and that discoloured syrup might be restored to its normal condition by the same method. This observation led the author to expose samples of syrup to diffused light inside a window, and to direct sunlight outside in a yard. Small colourless glass bottles were employed to hold the syrup, some being filled and stoppered, and others partly filled and covered with muslin. The effect of the light whether diffused or direct, in almost every case was to bleach the syrup, the time required depending upon circumstances. The conclusion arrived at by the author is that iodide of iron syrup may be preserved for a long period by exposure in colourless glass bottles to direct sunlight; the intensity of the light required being directly proportional to the volume and surface exposed. Quantities varying from 5 to 30 fluid ounces, had been kept in good condition for months exposed to the light. Occasionally a light brown layer might be seen in the morning on the surface, but it disappeared immediately on shaking the bottle. As to the mode of preparation the author considered the Pharmacopeia process unexceptionable. He noted that when the syrup was heated rapidly to boiling, before adding the iodide of iron solution, the preparation had less colour than if made at the lowest temperature at which the sugar would dissolve.

DISTILLATES. BY JOSEPH INCE. (Abstract.)

In this paper the author detailed the result of personal daily experience in pharmaceutic distillation. Distilled water was considered as the type of a large group of aqueous distillates. According to the author, this when first obtained had a most unpleasant odour and corresponding taste, and was not available for the purposes of pharmacy until it had been kept for at least three months. The odour of *Aqua Sambuci* and that of *Aqua Rose* were not fully developed until many months after distillation. The advantages of maceration previous to distillation were discussed and illustrated by practical observations on the preparation of *Aqua Cinnamomi*. The destructive distillation of amber for the production of *Acidum Succinicum pyrogenum*, *Spiritus volatilis Succini*, and *Oleum Sococini pyrogenum* was described at great length, and the author justified his minute observations on these articles of the French Codex by stating that they were extensively prepared in England. The paper involved much recondite pharmaceutic lore and much of that empirical knowledge that can only be obtained by daily laboratory work.

LARD, AND ITS PREPARATION FOR USE IN PHARMACY. BY MR. EDWARD SMITH, TORQUAY. (Abstract.)

Having referred to the varying instructions given for the preparation of lard in the different Pharmacopœias of this country and the Continent, and to the difficulty of purchasing really good lard, the author detailed a mode of preparation which had been found to give most satisfactory

results. His plan may be best described in his own words—

"First cut the flare into pieces about the size of a walnut, and allow it them to stand for half an hour covered with water, then work it well up with the hands in five or six successive portions of water; next, having drained off as much water as possible, place the woad in a water-bath, and as soon as melted, strain through fine linen. In this first straining it will be impossible to get rid of all the water, so that after cooling, and pouring away the separated water, it is necessary to remelt in a water-bath, and finally, carefully filter through paper in a warm closet.

"Now, I do not know how much my plan may differ from those in ordinary use, but the three essential points to be remarked are—

"1st. The repeated washings.

"2nd. The re-melting.

"3rd. The filtering.

"I am not prepared to say if the washings remove any matter in a state of incipient decomposition, but this I do know, that if the washings be omitted, the lard will not keep good so long a time, as with the washings. With regard to the re-melting, the object of this is to get rid of the whole of the water, for if any of this be retained by the lard, it becomes a very fertile source of rancidity. Sometimes I have noticed a number of most beautifully-coloured mould patches, some scarlet, or blue, pink, green, and indeed nearly a dozen different tints. I prefer this method of removing the water to the P.B. process of heating to 212° F. until it is expelled, simply because it is most important that the temperature applied should be as low as possible, and as lard melts at 100° F., a few degrees above this is all that is required. There is no difficulty in removing the last traces of water, inasmuch as the fat, being specifically lighter than water, floats on the surface, and when filtering, the last dregs, which contain all the water, should be rejected.

"The last and most important point is the filtering. Although straining through fine linen or flannel or felt may be sufficient when the consumption of the lard is rapid and not required for any very especial purpose, yet I cannot too strongly insist that if lard be required of first quality for such purposes as ointments, cold cream, pomades, and so on, it is absolutely essential that it should be filtered through paper, or some body that will effectually remove the numerous particles of membrane and tissue which are always to be found in imperfectly prepared lard, and which are the main and often sole cause of the rancidity of solid animal fats. This membrane or tissue has an unfortunate tendency to change, to become oxidized, and to set up a decomposing action through the entire mass of fat, resulting in the generation of fatty acids and rancidity; the presence of water materially expedites this decomposition, hence the necessity of re-melting to remove the last particles of water.

"By following the process above indicated, I have succeeded in preparing lard which will keep perfectly sweet and good for many months, even when the jar is constantly opened in the regular course of business, and even after the lapse of a year the lard has been much sweeter than ninetenths of that to be had from the best makers, at the best prices."

The paper was illustrated by some beautiful specimens of filtered lard. One of these specimens had been prepared from flare in an active state of decomposition, and was quite as good as the greater part of the best lard to be met with in commerce, showing that by the mode of preparation the rancidity had been nearly eliminated.

THE APPLICATION OF SPECTRAL ANALYSIS TO PHARMACY.
BY W. W. STODDART, F.G.S., F.C.S. (Abstract.)

The author, after a short review of the several ways in which optical phenomena can help the chemist in his researches, gave a brief sketch of the history of spectral analysis, and explanation, so far as related to his subject.

The subject of the paper was not the singular lines that are shown through the spectroscope by incandescent bodies, but the appearances of solutions and other liquids frequently used by the pharmacist.

The author had noticed that most of the articles of the Pharmacopœia gave a spectrum containing certain lines or

bands which were peculiar and constant to each. Some nearly colourless, as well as others highly coloured, showed these lines. These spectra were beautifully exemplified by specimens of various solutions and photographs of drawings. The spectroscope used was one made by Mr. Ladd, the well-known optician, of Beak-street. It was a distinct-vision instrument, used with a microscope, and was so contrived that an extra prism would enable the observer to compare two spectra side by side. The author used both wedge-shaped cells and glass tubes, but generally the latter. The solution under examination is diluted until the spectrum is most advantageously seen, the rate of dilution varying from three to ten volumes. As the dilution proceeds, the finest and faintest lines disappear, and afterwards the darkest. This is best viewed by means of the wedge-shaped cells, a thicker or thinner stratum being obtainable by simply raising or lowering the stage of the microscope. The constancy of the spectra is very great if only a good spectroscope be used carefully.

Some of the medicinal preparations, as tinctures of henbane, Indian hemp, foxglove, lantus, etc., produce spectra that will equal any of the well-known show objects in beauty.

Micro-spectroscopy promises well to be extremely useful in detecting adulterations and very small differences in the quality of Pharmaceutical preparations—the smallest discrepancy being instantly seen when the spectra are placed side by side by means of the additional prism. The use of the microspectroscope is of the greatest assistance to the analytical chemist, especially when occupied in geological and mineralogical investigations.

As instances of practical application were quoted the detection of the leaves of the annual henbane plant when used in the place of the biennial, cochineal in tincture of cardamoms, red poppies or arachis in fictitious syrup of violets, protoxide or peroxide of iron in minerals.

The paper contained descriptions of more than sixty different spectra observed by preparations of the British Pharmacopœia. By this method of observation an immense field of research is opened, and a source of the greatest pleasure and interest; and especially so to the Pharmaceutical chemist, who can tell whether or not his tinctures, liquors and infusions are up to the required standard.

ON SYRUP OF PHOSPHATE OF IRON. BY THOMAS B. GROVES, F.C.S. (Abstract.)

Having found in the latter part of 1867 a bottle of syrup of phosphate of iron that had long lain unobserved, and had acquired a dark sherry colour, the author commenced some experiments with the view of ascertaining the exact nature of the precipitate which had formed, of devising means for removing the colour of the syrup, and of preventing the re-acquisition of such colour. The precipitate was composed of two layers—the upper layer crystalline in structure, red-brown on the upper and white on the under surface; the under layer was white and amorphous. The two, separated by washing, reacted similarly, proving themselves to be a combination of peroxide of iron with ordinary phosphoric acid, and agreeing chemically with the white precipitate produced artificially in the syrup by the use of oxidants. A series of analytical and synthetical experiments led the author to conclude that the oxide deposited by the syrup corresponded closely with the precipitate obtained by adding perchloride of iron to excess of phosphate of soda previously acidulated with phosphoric acid, and which furnished on analysis the formula $5\text{Fe}_2\text{O}_3 \cdot 6\text{PO}_4 \cdot +\text{aq}$. Shaken with purified animal charcoal, the syrup was almost completely decolorised, the amount of oxidation, as indicated by deposition of phosphosphate being small. This simple process, the Author thought, might be legitimately employed to restore a coloured syrup of phosphate of iron to a saleable condition, subject, of course, to certain limitations.

In preparing syrup of phosphate of iron the author deviated somewhat from the B.P. instructions. The precipitate obtained by the use of cold solutions is so tedious to wash that he ventures to use half the quantity of boiling water, and maintain the boiling till the hydrate is decomposed and the precipitate becomes sandy. It may then be washed by decantation first, finally on a filter with great rapidity and little exposure to oxidation. There is, however, a loss of phosphate, the yield being 69 grs. only instead of 96 grs. This he allows for by using one-fifth more of

ingredients. The phosphoric acid he uses is prepared from amorphous phosphorus, and is four times the strength of the acid of the Pharmacopœia. By careful treatment the solution of phosphate for one Pharmacopœia quantity may be got into the volume of 4 oz., so that it is then only necessary to add 8 oz. of syrup to complete the article. A syrup containing only half as much sugar as the syrup of the B.P. was only slightly discoloured after exposure to diffused light from December, 1867, to August, 1869, while B.P. syrup had acquired a very dark tint.

The conclusion derived by the author from his experiments is that the colouration of the syrup is mainly due to the formation of caramel, under the joint influence of phosphoric acid and of proto-phosphate of iron undergoing oxidation on a dense syrup. In order to check this process, he recommends the use of less sugar, and to facilitate the preparation of the phosphate, the use of boiling water, etc., in the manner indicated.

THE ASSAY OF IPECAUCANHA. BY PROFESSOR ATTFIELD, PH.D. (Abstract.)

In this communication the Director of the Laboratories of the Pharmaceutical Society gave the results of an analysis of a sample of striated ipecacuanha, (*Psychotria emetica*) sent to him by Messrs. C. G. Meier and Co., and those obtained by an analogous assay of the true ipecacuanha (*Cephaelis Ipecaucanha*). The sample of striated ipecacuanha contained much sugar, and in working by Pelletier's process this sugar was obtained in conjunction with the emetine. It therefore became necessary to devise a process for the estimation of emetine, which should not be liable to error on account of the presence of sugar. The old process was accordingly supplemented by the quantitative estimation of nitrogen in the evaporated aqueous solution of the alcoholic extract of ipecacuanha. Instead of weighing the final product of Pelletier's process, a weighed portion of it was mixed with soda-lime, and burnt in the usual manner; and from the amount of nitrogen produced the proportion of pure emetine was calculated, the percentage of nitrogen in the alkaloid being known to be 4.3. Applying this process to a specimen of true ipecacuanha from the Pharmaceutical Society's museum, the Professor obtained 17 per cent. of Pelletier's impure emetine, but only 10 per cent. of pure emetine; while a specimen of striated ipecacuanha from the same source, gave 10 per cent. of extract containing pure emetine, equal to 6.5 per cent. of the root. The striated ipecacuanha furnished by Messrs. Meier yielded 50 per cent. of saccharid extract, but only 2.5 per cent. of the pure alkaloid. It was evident, therefore, that through some unknown influence of soil, climate, temperature, etc., this *Psychotria* had produced sugar where starch was usually found, and had secreted less than half the average proportion of active principle. The practical conclusion deduced from this interesting assay was, that the importation of the false ipecacuanha ought to be discouraged, as it was only likely to be employed as a clumsy adulterant of two or three European preparations of true ipecacuanha.

At the second sitting of the Conference, the following report was presented:—

REPORT OF SUB-COMMITTEE ON A "YEAR-BOOK OF PHARMACY."

The Executive Committee appointed the following five of its members a Sub-committee, to consider the desirability of recommending the Conference to undertake the publication of a "Year-Book of Pharmacy," viz., Professor Attfield, Professor Bentley, Mr. Brough, Mr. Carteigne, and Mr. Reynolds.

The Sub-committee beg to present the following as their conclusions:—

1st. That the publication of an annual abstract of the progress of pharmacy is eminently desirable, and that its accomplishment would be in harmony with the original intention and constitution of the Conference. Further, that the Conference would be materially strengthened by producing such a work, which one would supply it with a *raison d'être*, and would increase its influence over members who do not attend its meetings.

2nd. That the "Annual Report on the Progress of Pharmacy," included in the "Proceedings of the American Pharmaceutical Association," illustrates the general plan which

should be adopted, but that the abstracts of papers should be fuller than in the work quoted.

3rd. That the undertaking requires the services
 (1.) Of a paid editor, to be selected by the Executive Committee after due advertisement.
 (2.) Of an unpaid "Committee of Publication," consisting of three or four members.

4th. That the annual volume of the "Proceedings of the Conference," including the Year-Book, may in future make an octavo of about 500 pages of clear type, larger than that used for original articles in the *Pharmaceutical Journal*, a page to contain the matter of two-thirds of a page of the *Pharmaceutical Journal*.

5th. Two modes of publication are open for selection; the following estimate of ways and means being arrived at after consultation with the Treasurer of the Conference. An effort to increase the number of members might be expected to raise this to one thousand, yielding a gross annual income of £250. The ordinary expenditure of the Conference is so light that out of this sum nearly £200 might without imprudence be engaged to a Year-Book Fund.

The first mode of publication that offers itself is that of the Conference undertaking the volume at its own risk of profit or loss. Estimates for printing an edition of one thousand copies have been obtained from two houses, which show that £100 would cover this, the chief expense, whilst the editor, paper, binding, and publishing expenses would be met by a sum between £100 and £150. From a total gross cost of £200 to £250, the Committee feel justified in deducting £50 as proceeds of advertisements. An increase in the edition printed to fifteen hundred would reduce the cost of each copy by 15 per cent.

The second and alternative method of publication consists in transferring the copyright and all risks to a publisher. The Sub-committee have received from a leading and particularly eligible firm a definite offer to the following effect:—That for the sum of £200, the publishers would supply the Conference with one thousand copies, the only other expense to our association being the editor's salary.

The Sub-committee have considered the respective advantages of the two schemes, and give the following as their conclusions:—That the use of the Year-Book as a means of adding members to the Conference is a more desirable object than the attainment of a large outside sale, although facilities for purchasing the work should be given to non-members at home and abroad. That independent publication would be the less costly of the two schemes as now submitted, and should be adopted, unless altered terms should be offered.

As a consequence of the foregoing, the Executive Committee recommend that arrangements should forthwith be made for the publication in 1870 of such a volume as has now been indicated.

After some discussion, the Report was unanimously adopted, and the Secretaries were requested to solicit, by advertisement, communications from gentlemen desirous of offering their services as editor.

The first paper read at the second sitting we give without abridgement:—

ON OPPORTUNITIES FOR PHARMACEUTICAL EDUCATION IN THE PROVINCES. BY MR. G. F. SCHACHT.

It is not, perhaps, advisable (even were I competent to the task) that the valuable time of this Conference should be occupied with any attempt of mine to add a single grace to the already ornate tribute of praise which so many able men have, are now, helped to raise in honour of Science and her eternal charms. The subject has long constituted, and still continues to constitute, a theme that never fails to enlist, on the one hand, the highest eloquence amongst us, and, on the other, the utmost sympathy and attention.

I may, perhaps, venture to indulge myself with the expression of a hope that topics of such high import will ever be welcome in a company of pharmacists; but they are not my theme to-day—the ears that I address have long been open to callings such as these, and, as I think, those that heard have answered.

Neither shall I trouble you with any special efforts to exalt the impression of the dignity, or deepen the conviction of the responsibility that attaches to our duties. These considerations, with their important and interesting

issues, have also been enlarged upon frequently and well. I leave them, therefore, as requiring no advocacy from me, and shall rather assume in this paper (as I believe I am justified in assuming) that the labourers to whom I have referred have not laboured in vain, that their leaven has worked well, that the members of our entire body are fairly alive to all their obligations, and that young and old are alike regarding scientific study, in at least one of two aspects—either as a delight or as a necessity.

With all gratitude, then, to those whose labours have borne so fair a fruit, I venture upon the consideration of a question of at least equal practical importance.

Hitherto, we have been chiefly solicitous to create a demand, is it not time to consider the supply? Public opinion has at last confirmed, in a very practical manner, the doctrines we have been so long advocating; an Act of Parliament has been passed, which necessitates a certain standard of scientific proficiency in every pharmacist; for this, if what I have said be true, we are largely responsible. Is it not, then, but simply fair that we now set ourselves to provide sufficient opportunities for the culture of those attainments we have done so much to make compulsory?

Let me first say a word as to numbers. I find, upon the authority of the Register lately issued in accordance with the provisions of the Pharmacy Act, that there are 11,638 chemists and druggists in England, Wales, and Scotland. For several reasons, I have determined to limit the scope of my remarks to England and Wales. As the population of Scotland is to that of England as one to seven, the deduction of one-eighth of the above number (viz. 1,454) will give 10,184 as the number of master chemists and druggists in England and Wales. The proportion which the assistants and apprentices bear to the principals is a little difficult to determine absolutely, but, from the evidence of a few lists I have made of their exact numbers in places of somewhat varied character, I come to the conclusion to estimate them as 13 to 1. This would give the number of the assistants and apprentices, or the student class of our body (as I shall call them), as 13,578. Again, I estimate the average length of time a young man remains in the ranks of this class (taking into account the chances of his removal by death, by change of occupation, and by promotion to the rank of master) to be about eight years. Hence these 13,578 are renewed every eight years, in other words, an average of 1,693 fresh young men are annually entering the business. When, therefore, in the future, matters have settled into their normal working, we may expect to have to provide opportunities for scientific instruction for about this number (1,693) annually. But, in the meantime, it must be remembered, that a large proportion of the existing student class (the 13,578) have never yet been scientifically educated, and that they will be pressing for opportunities also. What that proportion may be I have but few data to judge from; but if it be only half, then 6,789, whose need is urgent, must for the be added to the list, raising the number of probable annual applicants to about 3,000. This, then, is something like the number of young men who, with more or less earnestness, are responding to the appeals that have been made to them, and to the necessities that have been created; but when they demand, where shall we go for the commodity you have now made a necessity—what can we answer?

The two sciences upon which pharmacy is based are chemistry and botany. What opportunities exist throughout the length and breadth of the land for the study of chemistry and botany?

London is undoubtedly largely provided with good means of supplying a pharmaceutical student's wants. Regard being had to the number of students *only* that really belong to, or are indigenous to London, the provision might be said to be adequate. First and foremost stands the Institution in Bloomsbury-square, without doubt the best school for the pharmacist, both for quality of instruction and moderation of cost. Then there are excellent courses of lectures at the two colleges—King's and University, at the various medical schools, at the College of Chemistry, and at other places, so that for a young man living in London, it is only necessary that he have the inclination and sufficient leisure, and he can enjoy the highest scientific instruction.

But what is the *provincial* to do? Now, I may as well here refer to a proposition that has been frequently urged, that every young pharmacist at the completion of his appren-

ticeship (wherever that may have been fulfilled) should undertake a course of science at the Society's laboratories and lecture-rooms, and there and then pass his examinations. To the desirability of such a plan, when practicable, I entirely agree; but it is manifestly limited by two important conditions—1stly, the ability of the student to afford the time and money, and, 2ndly, the amount of accommodation at Bloomsbury-square. Even to those who reside in London, it involves a larger outlay than many can afford, whilst to those who live in the provinces a much larger expenditure still is involved; moreover, if our estimate of numbers be anything like correct, it is clear the establishment won't hold them. It really can accommodate only about its own proportion of the new men annually introduced into the business—that is, about $\frac{1}{4}$ th of the entire number; so our question, "What is the provincial to do?" remains still to be considered.

Now, the opportunities offered in the provinces may, perhaps, be conveniently considered under three heads:—

1st. Local Pharmaceutical Societies.

2nd. Local Medical Schools.

3rd. Local Classes in connection with the Science and Art Department of the Committee of Council on Education.

Let us take each of these divisions in turn, and see how far they meet the necessities of the case.

1st. Local Pharmaceutical Associations exist in seventeen towns, viz., Liverpool, Lincoln, Leeds, Birmingham, Ashton, Plymouth, Nottingham, Manchester, Bradford, Sheffield, Sunderland, Hull, York, Halifax, Newcastle, Bath, Exeter.

I addressed notes to the Hon. Secretaries of each of these Associations inquiring the scope of their respective plans, and especially whether they include systematic instruction in chemistry and botany, and I have tabulated the contents of the replies as under:—

Place.	Classes on.	No. of Lectures.	Fee.	Average attendance.
Ashton-under-Lyne	Use the Manch ester School			
Bath	None.			
Bradford	Chemistry	12	..	A recent experiment.
	Botany	12	..	[in association with the Midland Institute, which is supported in part by the town.]
Birmingham	Chemistry	12	3/-	
	Botany	12	3/-	
	Practical Ch.	..	7/-	
Exeter	Chemistry	Courses	5/-10/-	S. and A. Classes.
	Botany			Recently established.
Hull	Chemistry	A Course	2/-	9
	Pharmacopœia			In course of formation.
Halifax .....	..	..	..	Employ Insti tute Laboratory.
Leeds	Ch. Inorganic	28	2/-	12
	Ch. Organic	28	2/-	25
	Ch. Practical			
	Botany	26	5/-	12
Lincoln	None	..	..	Weekly meetings for mutual instruction: desultory subjects.
				[In association with Queen's College.]
Liverpool	Chemistry	..	..
	Botany			
	Mat. Med.			
Manchester	Latin	12	5/-	50
	Chemistry	20	7/-6	90
	Botany	12	5/-	80
Newcastle	Ch. Principles	6 months' Courses	25/-	Durham University.
	Ch. Physics			
	Ch. Inorganic			
	Ch. Practical			
	Botany	3 months'		
	Mat. Med.			
Nottingham	Latin	..	..	S. and A. Classes.
Plymouth	Chemistry	..	2/-	Chemistry to be included next session.
	Botany			
	Mat. Med.			
Sheffield	Chemistry	25	10/-6	20
	Botany			
	Mat. Med.	20	7.6	12
Sunderland	None.			Too much "vis inertia." Great indifference.
York	None.			

And in Newcastle the labours of our pharmaceutical brethren have resulted in the establishment of a Chair of

Pharmacy at the University of Durham—that body thus becoming, as far as I know, the first to recognise the claims of pharmacy to rank among the learned professions. The efforts of local pharmacists have been so far recognised and supported by the authorities of the College of Medicine, that the result has been the establishment of a Chair of Pharmacy in Durham University, and distinct facilities have been offered for complete and systematic, rather than fragmentary study. This seems worthy of especial mention as the programme for the Session 1869-70, just issued, places medicine and pharmacy side by side, and defines equally the proper order of study in each. In point of fact, the section of pharmacy becomes a "faculty" in all but the name, and thus the claims of pharmacy as a profession are first recognised by an ENGLISH University.

I must not, however, enlarge upon particulars, interesting and useful though they be, but must content myself with the general statements that the Pharmaceutical Associations, in connection with which chemistry and botany are systematically taught, are eleven in number.

It will be seen that of these seventeen Pharmaceutical Associations, eleven only have organised any plans for systematic scientific teaching, and some of these are far from complete. From others, however, very gratifying reports were received. At Manchester, for instance, they are able to speak of an average attendance at their lectures of fifty pupils. At Leeds, Liverpool, and Sheffield a resolution seems to prevail that their schools shall be really worthy of their respective localities, as at Newcastle.

2nd. Medical schools exist in nine towns, viz., in Cambridge, Birmingham, Bristol, Manchester, Liverpool, Leeds, Newcastle, Sheffield, and Hull. All of these chemistry and botany constitute a portion of the general curriculum of study. From what I can learn, however, these subjects do not generally rank as of the highest importance in the medical students' course; they are therefore most probably not the best taught subjects in the school, and the fees (except where mitigated by arrangement with the local Pharmaceutical Society) are high. It must also be remarked that the towns I have just named, with the exception of two, have been already mentioned as containing organised pharmaceutical associations.

3rd. Science schools are to be found in 232 towns in England and Wales. The word science is here employed to include twenty-three subjects. They are not necessarily all taught at every school, but a selection, determined pretty well by the demand, constitutes its curriculum. I find that of these 232 towns, there are 13 whose schools include both chemistry and botany in their schemes; 86 that include chemistry and not botany; and 2 that include botany and not chemistry (I am speaking of the session 1868-9). But again I must state that, of these 13 at which both chemistry and botany are taught, 3 have been already mentioned as possessing organizations in connection with local pharmaceutical associations.

These are all the organizations for the systematic study of chemistry and botany in the provinces with which I am acquainted. It is quite possible some may have escaped my knowledge; I hope such is the case, but I fear they can be but few. And so we are brought to this, that about 1,700 would-be students spread all over the country are constantly seeking for scientific instruction, and that fair opportunities are offered them in 29 towns, and half opportunities in about 88 more.

I think every gentleman in this room will echo me in the sentiment that this is a condition of things to be deplored, and, if possible, remedied.

But the mere expression of a sentiment will work no miracle in facts; nor can either the enthusiasm or labour of any individual, however giant-like his powers, be of much avail in a case like this. It is the hearty, earnest co-operative work of the many that alone can produce the change we hope. I shall take the liberty presently of speaking of a little work done upon a small scale, and adapted perhaps for small conditions, but attended with very hopeful results (and this, indeed will be my excuse for intruding myself before you at all); but before doing so, I am anxious to take advantage of this gathering for the far more important purpose of getting expressions of opinion as to the best method of general action,—so that, perhaps, with our faces resolutely set to what commends itself to the

majority several hundred who are not yet be reported thereby for the hazard in the of local well-being more & a advocate in kept in fellowship chamber Nature the detail but it extent develop uses certain lie reader With number the sci education is entered who he teacher annual can the place enabled and hon the tide no the con afford of the offered In the taught the sed. Thus in the reg. Even D impose his id. without after w annual results establish can be taken annua are un Royal Irish find st recognizin arm indirec For mea efficient atient minis The Pharm efficient not er Societ

majority as the most promising course, we might, in our several localities, urge our labours upon some common plan whereby not only should we be more likely to commence aright, but comparisons of progress might from time to time be reported, modifications suggested, and the general result thereby greatly helped.

For the purpose, therefore, of eliciting the views of others, I hazard a few opinions of my own.

In the first place, I consider the universal establishment of local pharmaceutical associations, as nuclei of action, to be well-nigh indispensable; and I am of opinion that the more a perfectly unselfish object, such as the one I am advocating,—systematic scientific teaching for the juniors,—is kept resolutely to the front, and all dangerous and invidious topics, such as “uniformity of prices,” “good fellowship,” and the like avoided, the better will be their chance of general success.

Naturally, every local association must determine for itself the details best adapted for its own special circumstances; but it must be certainly wise in all communities of limited extent to concentrate rather than to divide energy, and to develop existing agencies rather than to weaken them by unnecessary multiplication. I have already indicated that certain agencies, viz., medical schools and science schools, lie ready to the hand of our associations in many places. With regard to the former, they are perhaps too few in number to be of much general help; but the teaching in the science schools might be employed with the greatest advantage wherever they are found to exist. It must be remembered that the principles upon which Government aid is extended to the cause of education are “help to those who help themselves” and “payment for results.” The teacher is rewarded by grants of money in proportion to the number of pupils he can pass through the ordeal of the annual Government examinations and the positions they can then take. His utmost personal interest in the work is thus secured; and the pupils are encouraged, in the first place, by the smallness of the fees the teacher is thus enabled to demand, and afterwards by rewards of prizes and honours. Our local associations will therefore be sure of the hearty co-operation of all the science teachers of their neighbourhood, who will naturally be glad to welcome the constant supplies of pupils which our ranks are likely to afford; and they will also enlist more of the confidence of the pupils, who will be sure to appreciate the advantages offered by a thoroughly well organised system of teaching. In those places where at present *both* our subjects are not taught, an effort might be made to show the authorities of the schools that a fair number of pupils are ready to attend. This might frequently be sufficient to cause the opening of the required class.

Even in places where no science classes yet exist, our associations might still look in this direction for help. The Department is thoroughly liberal in its scheme, and imposes as few limitations as possible upon the bestowal of its aid. An individual who has the requisite knowledge can without much difficulty become a “recognised teacher;” after which he may claim that his pupils be included in the annual examinations, and that he himself be “paid for the results,” even as though he constituted a portion of an established science school. Ordinarily, before an individual can become a “recognised teacher,” he must himself have taken a first or second class in the subject at one of the annual Government examinations. Exceptions, however, are made in the case of a candidate who has taken any university degree, or has obtained the associateship of the Royal School of Mines or the Royal College of Science, Ireland. Our associations, therefore, would only have to find such an individual, and induce him to procure the recognition of the Department, to at once enable themselves to arrange for moderate fees from their pupils, and thus indirectly to appropriate a Government grant.

From these considerations, therefore, I earnestly recommend all pharmaceutical associations to direct their special attention to the Science and Art Department of the Committee of Council on Education.

The question has been elsewhere raised, whether local Pharmaceutical Associations which have organised an efficient and *bona fide* system of scientific instruction, are not entitled to pecuniary help from the Pharmaceutical Society of Great Britain?

This appears to me to be a question which it is perfectly competent for any member of that Society to raise and discuss among his fellow members, but not to be quite legitimate here. The Pharmaceutical Society occupies the somewhat anomalous position of a private society entrusted with certain public duties. The way in which those public duties are performed is open to the criticism of the whole world, but the distribution of its funds must be left to the decision of its members only. I allude to the topic, therefore, merely for the sake of explaining why I do not enlarge upon it.

But even if provincial Pharmaceutical Associations and science classes existed in every town that contained a dozen pharmacists, there would still be many a student far from such wholesome influences. In such cases I suggest the trial of an experiment similar to one I shall now describe.

On the first Tuesday of last October I commenced a series of “Readings in Chemistry,” and invited the attendance of the assistants and apprentices of my neighbourhood. The book selected was Mr. Roscoe’s “Elementary Chemistry,” and the plan adopted was the following:—A portion, usually one of Mr. Roscoe’s own chapters or lessons, was read by myself; the author’s questions at the end of the book were then looked over, and each student was invited to prepare the answers in writing and bring them to the next reading. Our first business, then, at each meeting was to go over these answers. I made that the opportunity to introduce any explanations of my own, unless especially questioned during the reading. By this method every point of importance was gone over three times: first, at the original reading, then at home in writing out the answer, and again at the next reading, when the answer was reported. This was continued for the first three months twice a week, and subsequently once a week, until the 1st of June, and so in eight months from the date of commencing we completed our book, with the following satisfactory result. An examination was held under the usual conditions. The candidates were ignorant of the questions intended to be proposed, and they answered them in writing without any reference to book, note, or individual. And these are the questions:—

1st. Explain the chemical difference between an element, a compound, and a mixture.

2nd. Enumerate the fundamental laws of chemical combination, and explain briefly Dalton’s Atomic Theory.

3rd. Explain the word “atomicity” as applied to elements and to radicals, and give one example of a *monad* element and *monad* radical, one of a *diedad* element and radical, and one of a *triad* element and radical.

4th. What are the types upon which chemists arrange the majority of chemical compounds? Give the type and one example of each type side by side.

5th. State the laws that regulate the expansion and contraction of gases under variations of temperature and atmospheric pressure, and give one illustration.

6th. What relation exists between the densities of gaseous bodies, simple and compound, and their combining weights?

7th. The percentage composition of an organic acid was found to be—

Carbon	40
Hydrogen	6·6
Oxygen..	53·4
	100·0

and its silver salt contained 64·08 per cent. of silver. Deduce the formula, and name the acid.

8th. Explain what is meant by mono-, di-, and tri-atomic alcohols; give one example of each, with its actual composition and typical formula; and mention the most important derivatives in each series, with the typical formula of each derivative.

9th. Write the respective formulae of the yellow and the red prussiates of potash; and mention the characteristic behaviour of each with the salts of iron.

10th. Give the chief tests for the salts of zinc, magnesium, aluminium, copper, silver, and lead.

The answers were forwarded for estimation to Dr. Attfield, who was good enough to report upon them in the following words:—

17, Bloomsbury Square, W.C., June 8th, 1869.

MY DEAR SCHACHT.—The following table contains the results of my examination of the examination papers you forwarded yesterday:—

Number of question. Full value of answer.	1	2	3	4	5	6	7	8	9	10	12	14	183
“X. Y. Z.” ..	9	40	19	9	20	10	20	16	0	0	104	0	104
“Bristolensis” ..	9	10	10	9	20	10	20	16	0	0	45	0	45
“Finis”	9	15	12	13	10	20	16	0	0	0	102	0	102
“Semper Idem” ..	6	15	3	4	5	10	0	8	10	0	0	56	56

“X. Y. Z.” and “Finis” are practically equal, and their papers are about twice as good as those of “Semper Idem” and “Bristolensis.” The latter gentlemen have done quite as well as I could have expected

From your description of the course of reading they have gone through; the more I reflect upon my ability, I have no force of mind to do class-work by much home-study. The general character of the questions and answers show me that your excellent plan of mutual instruction has been carried out in a most judicious manner, the leading principles of chemistry forming, apparently, the staple of your conversations. I hope you will give publicity to your scheme, for I am convinced that, short of direct personal contact with the teacher, there is no method of instruction, no method of learning is likely to be so successful; certainly no method whatever is so practicable for men engaged in the practice of pharmacy during the greater part of every day. Not the least advantage of the system is the occasion it affords of free interchange of thought and feeling between the followers of a common calling.

With best wishes for continued success, and thanks for the opportunity you have given me of familiarizing myself with this new feature of pharmaceutical education,

Believe me, my dear Schacht,

Yours very faithfully,

JOHN ATTFIELD.

To this high testimony to the success of my experiment, I have only to add that, with one exception, my pupils were all beginners in chemistry, and that there was not one atom of cramming from beginning to end. All that was acquired was well understood and legitimately stowed away, and they left off with a most healthy desire for more. Where doubt or diffidence at first existed, interest, and finally enthusiasm, prevailed; and, at the close of our labours, I had the pleasure of receiving a most gratifying address, one sentence of which, as having general and not personal significance, I quote: "Having advanced so far, we shall feel more encouraged to continue our endeavours to qualify in the higher branches of the science."

This, then, is my experiment,—I wanted to try if anything might be done for pharmaceutical education by a commonplace man under commonplace circumstances.—I have tried,—and, if in telling you about it I have been somewhat minute, it was because I wanted you to join in the verdict. I am bold to think you will agree that a good deal was done. Those questions are not easy for beginners, and yet my young students were found to be nearly equal to them. But I am also anxious not to overexalt the merits of my particular form of work. On the other hand, I wish to record my conviction that a great deal more would have been done, had the opportunities offered them been more favourable. Chemistry is an experimental science, and botany one of careful and minute observation of natural facts,—the laboratory and the experimental lecture are the proper school for the one, and the field and the microscope for the other; it is true, however, that for the full study of either, a certain amount of book-work is necessary, and, in that part of the business, I gave these young men some help. One other consideration also deserves mention, viz., that our success, such as it was, goes to prove the truth of my assumption, that our juniors are ready to avail themselves of all fair opportunities that are offered them.

I say, then, that under certain circumstances, and for certain purposes, "readings in chemistry," and, perhaps, "readings in botany," might be looked to as useful elements in pharmaceutical scientific training; not the best, but available, perhaps, at times when nothing better is to be had; and, be it remembered, no title or diploma is here required. Given a good book and a little wholesome enthusiasm, and any master pharmacist may be sure to bring about him an attentive and willing class. The book I selected is a good one, but there are many to choose from, and there is one that will be in our hands in a few months which, from what I have seen, I think will probably command itself to us pharmacists before all others,—I mean the new edition of Dr. Attfield's "Chemistry."

But let us ever remember, no book-work alone, however excellent in kind, is sufficient for our purpose; and let my last line be to urge upon every provincial pharmaceutical association, to adopt as the very basis of its organization, the provision of the best systematic, experimental, and practical scientific teaching that its locality can supply.

CONTRIBUTIONS TO THE HISTORY OF BUXINE, BY DR. FLÜCKIGER,
HON. MEMBER OF THE CONFERENCE. (*Abstract*)

According to the investigations detailed in this elaborate paper, it is highly probable that the "Bibirine" obtained from the wood of the Bibiru-tréé (*Necandra Rodie*), the "Pelosine" discovered by Wiggers in Pareira Brava, the "Buxine" of the leaves of *Buxus sempervirens*, the "Paricine" discovered by Winckler in a false Cinchona bark, and the "Chinoidine" recognised by De Vrij in most,

or in all, Cinchona barks, are but one and the same alkaloid, to which the name *Buxine* was applied by Fauré as early as 1830. Incidentally, the author confirmed Mr. Hanbury's observation, that the Pareira Brava of the English shops is not derived from *Cissampelos Pareira*, to which it is commonly attributed. From the stems and roots of the *Cissampelos*, as well as from those of *Botryopsis platyphylla* (the latter constituting an excellent sort of Pareira Brava used in Brazil) the author obtained the alkaloid; but the Pareira Brava of commerce commonly yielded none at all. This fact shows that true Pareira derived from *Cissampelos Pareira* ought to be introduced instead of the usual drug, which, on account of its want of alkaloid is probably quite useless.

ON TINCTURE OF ACETATE OF IRON, BY MESSRS. J. DEANE
AND T. JEFFERSON. (*Abstract*)

Tincture of acetate of iron being liable to decomposition and troublesome to make in small quantity, the authors undertook some experiments with the view of preparing a tincture which might be kept without material change for a reasonable time, and which should be equally definite in composition with that prepared according to the Pharmacopœia formula. Their investigation led to the adoption of the following formula:—

Liq. Ferri Persulph., 2*½* oz. (fluid.).

Liq. Ammoniae, q. s.

The precipitated oxide of iron, after being thoroughly washed and pressed as dry as possible, is to be dissolved, without heat, in 520 grains, or, approximately, 9 fluid drachms, of glacial acetic acid, and the solution diluted with distilled water to 5 fluid ounces. One part of this, with three parts sp. vini rect., will represent the tinct. ferri acetatis, B. P. In this way a very elegant and convenient preparation may be obtained, which will keep for a considerable time, samples so prepared having been kept over twelve months without any change beyond the formation of a small quantity of a crystalline deposit, which, however, is entirely soluble on dilution with either sp. vini rect. or aqua destillata; the solution is, in fact, slightly supersaturated, but it was found that any attempt to make a more dilute solution, such as twice or thrice the strength of the tincture, interfered with its keeping properties.

NOTE ON THE PREVENTION OF ACCIDENTAL POISONING, BY
MR. G. BURRELL. (*Abstract*)

Having referred to recent lamentable cases of accidental poisoning, and insisted on the necessity of exercising every precaution, the author suggested that all bottles containing the more deadly poisons in frequent or occasional use, should be enclosed in wooden or paper cases,—each carefully labelled, and having the maximum dose legibly written or painted on. The case might be painted green or red, or covered with paper of either colour, and all such potent substances should be kept in a press *not so accessible* as the other medicines we are continually handling. He further suggested that every bottle containing an energetic medicine, poisonous or non-poisonous, should have the maximum dose on it, in order to impress that important characteristic as indelibly on the minds of assistants as the name of the medicine itself.

HISTORICAL NOTICES OF CHEMISTS AND DRUGGISTS. BY MR.
W. D. SAVAGE. (*Abstract*)

The author stated that the chemists and druggists obtained their distinctive recognition in comparatively modern times, and that their early history was involved in the chronicles of the apothecaries. In the reign of Henry VIII. the qualifications of persons practising physic and surgery were regulated by the Act of Parliament, and, subsequently, in 1543, the apothecaries were recognised as a distinct class of medical practitioners in a curious Act which was passed for the protection of divers persons whom God had endowed with a knowledge of the nature, kind, and operation of certain herbs, roots, and waters, and who had been sued, troubled, and vexed by the surgeons. It would seem, however, that these irregular practitioners had to exercise their skill within certain limits, and could only employ outward applications. In May, 1618, the College of Physicians issued their first Pharmacopœia for distribution among the apothecaries, but it was so imperfect that they were obliged to recall it, and publish an improved edition in December

of the same year. In 1606, the apothecaries and the grocers were incorporated by James I., but the alliance appears to have been unsatisfactory, for, eleven years later, in 1617, the two classes were disunited, and the Apothecaries' Company was formed, with the designation of "The Masters, Wardens, and Society of the Art and Mystery of Apothecaries of the City of London." The quarrels of the grocers and apothecaries led to the development of the company of "distillers" or "vintners," to whom the preparation of spirituous liquors and cordial compounds was entrusted. In the early part of the eighteenth century, the Apothecaries' Company frequently came into collision with the wholesale chemists of London, and showed themselves not over scrupulous as to the means they adopted for promoting the interests of their own body. At this time the apothecaries prescribed as well as dispensed medicines, and the College of Physicians having protested in vain against this encroachment on their province, retaliated by opening a dispensary in Warwick-lane for the sale of medicines to the poor at cost price. In 1812, the Apothecaries' Company found it desirable to apply for a Bill to regulate the practice of apothecaries, surgeon-apothecaries, midwives, and chemists and druggists, and their struggle for supremacy was consummated in 1815 by the passing of the Apothecaries' Act. The Colleges of Physicians and Surgeons had not much difficulty in arranging their differences with the company, and the druggists, with the aid of public opinion, succeeded in overcoming the united opposition of the three classes of practitioners, and secured their existing rights by a clause providing that nothing in the Act shall extend "to prejudice, or in any way to affect the trade or business of a chemist and druggist, in the buying, preparing, compounding, dispensing, and vending drugs, medicines, and medicinal compounds, wholesale and retail; but all persons using or exercising the said trade or business, or who shall or may hereafter use or exercise the same, shall and may use, exercise, and carry on the same trade or business in such manner, and as fully and amply, to all intents and purposes, as the same trade or business was used, exercised, or carried on by chemists and druggists before the passing of this Act." The author gave this clause *in extenso*, as it had been the sheet-anchor of the chemists and druggists, and had served them in many subsequent troubles. Little was done towards a regular organisation of the chemists and druggists until Mr. Jacob Bell and his associates founded the Pharmaceutical Society. The Charter of Incorporation was obtained in 1843, and an Act of Parliament for regulating the qualifications of Pharmaceutical Chemists was passed in 1852. At the conclusion of his long and interesting paper, the author adverted to the public recognition of the Society in the compilation of the British Pharmacopœia, and in the appointments of medical dispensers under Government.

ON EXCIPIENTS FOR PILLS. BY MR. W. D. SAVAGE.

Mr. Arnold Cooley, in his work on pill-making, concludes the introduction with this very apposite sentence, "Honour and good faith toward the customer, or patient, will not permit defect in the consistence or plasticity of a pill-mass to be remedied by additions unauthorised by the prescription, as is unfortunately too often done by careless, inexperienced, and unscrupulous manipulators." Whilst I entirely concur in the *principle* enunciated by Mr. Cooley, there are cases in practice which not only justify but actually require an addition before the author's wishes can be complied with, and pills made,—this too, without detracting in the slightest degree from the efficacy of the remedy prescribed; take for illustration the following recipe, which first suggested to Mr. Hornsby the necessity of an addition:—

B. Creasoti mxxiv.
Pil. Sapon. Co. . . 5ss.
M. into Pil. xij.

If your pil. sapon. co. be fresh, you will find this to be an unmanageable mass; add to it liquorice powder, and you have, with only *mij* of creasote, 7 gr. pills (*A*); with decorated liquorice you will require one grain more for each pill (*B*); with the *mij* of creasote, you have with powdered gum tragacanth and wax very large pills (*C*); with calcined magnesia and also with calcined magnesia and powdered soap, you have some nice-looking pills (*D* and *E*), heavy, but not bulky; they have, however, the disadvantage of

being insoluble in boiling water: *mij* of creasote and 5 grains of pil. sapon. co., absorbed so much liquorice that, divided into two pills, each weighed $\frac{7}{4}$ grains (*F*). Powdered Castile soap with the relative proportion of opium was tried (*G*), but with little advantage; creasote and powdered opium without soap, but with liquorice powder, made more convenient pills (*H*), but still objectionable; and white and yellow wax were tried, the latter, being more plastic, is preferable, and makes very good pills; therefore, if it is necessary to give creasote in pills at all, why adopt the objectionable plan of ordering, as is usual, pil. sapon. co. with it, when an equivalent quantity of opium with wax, will produce a pill holding two minims of creasote not so large as an ordinary 5-grain pill, possessing the advantage of retaining the oil, without increasing in size by re-absorbing powder (*J*)? Another form without opium is (*K*); with half a grain more wax in each pill is (*L*). In order to test Mr. Hornsby's results I made several lots of pills with some old pil. sapon. co., and using the drop instead of the minimum measure for the oils, and whilst the pills are much smaller than his, the advantage of wax over soap is most manifest. No. 1, plain and silvered, compared with No. 2 or 3 is obviously in favour of the former, so that although wax is superior to soap as an excipient with oil, we have no right to use it when soap is ordered, unless by permission of the prescriber. At the same time it is well that any suggestion of practical utility should be brought before the trade, and by them to the profession, and I know of no means better than this conference to effect the object. The convenience of administering creasote in pills is but a small matter. The general application of wax as an excipient is further illustrated in specimens of croton oil pills, as Nos. 4 and 5, and again in combining ol. menth. pip. or other oils in such masses as ferri sulph. and pil. galban. co. (*M*). In making ext. colchic. acet. and ext. cannabis into pills (when permitted), pulv. tragac. is a most convenient excipient; a good plastic mass is formed, and pills thus made retain their shape a long time (No. 6). With respect to calomel pills, I have found manna the best medium for making them, as specimen No. 7. The pil. ferri iodid. of the B. P. will not keep long unchanged; but by a slightly modified process, containing the same quantity of iodide of iron, they may be made to keep any length of time unchanged, as evidenced by the sample in the tin box made two years ago. Mr. H. has not revealed the means by which he has affected this object, but I know the same may be accomplished by coating the pills with tolu.

B. Creasoti, <i>mij</i> .	A.	K.
Pil. Sapon. Co. gr. liss.		
Pulv. Glycyrrh. decort. q. s.		
Six pills weigh 42 grains.		
	B.	
B. Creasoti, <i>mij</i> .		
Pil. Sapon. Co. gr. liss.		
Pulv. Glycyrrh. decort. q. s.		
Six pills weigh 42 grains.		
	C.	
B. Creasoti, <i>mij</i> .		
Pulv. Tragac. gr. j.		
Cerne Alb. gr. iij. M.		
	D.	
B. Creasoti, <i>mij</i> .		
Magn. Calc. q. s. M.		
Into 12 pills (65 grains).		
	E.	
B. Creasoti, <i>mij</i> .		
Pulv. Sapon. gr. xii.		
Magn. Calc. q. s. M.		
12 pills.		
	F.	
B. Creasoti, <i>mij</i> .		
Pil. Sapon. Co. gr. v. M.		
	G.	
B. Creasoti, <i>mij</i> .		
Pulv. Opif. gr. xii.		
Pulv. Sapon. gr. xxiv.		
Pulv. Glycyrrh. decort. q. s.		
Pt. Pil. xij.; weight $\frac{8}{4}$ gr. <i>s</i> .		
	H.	
B. Creasoti, <i>mij</i> .		
Pulv. Opif. gr. xii.		
Pulv. Glycyrrh. decort. q. s.		
Pt. Pil. xij.; weight $\frac{8}{4}$ gr. <i>s</i> .		
	I.	
B. Creasoti, <i>mij</i> .		
Pulv. Opif. gr. xii.		
Cerne Flave, gr. iij. M. Pil.		
	J.	
B. Creasoti, <i>mij</i> .		
Pulv. gr. iij.		
M. into Pil. xij.		
	K.	
Cere Flave, gr. xxiv.		
Pulv. Glycyrrh. gr. xii. M.		
12 pills.		
	L.	
B. Creasoti, <i>mij</i> .		
Cere Flave, 3ss. M.		
12 pills.		
	M.	
B. Ferri Sulph. gr. j.		
Pil. Galban. Co. gr. liss.		
Ol. Menth. Pip. iii.		
Cerne Flave, gr. j. M. Pil.		
	No. 1.	
B. Creasoti, <i>gtt. xxiv.</i>		
Cere Flave, gr. xxiv. M.		
12 pills.		
	No. 2.	
B. Creasoti, <i>gtt. xxiv.</i>		
Pil. Sapon. Co. (<i>old</i>) gr. xxiv.		
M. 12 pills.		
	No. 3.	
B. Creasoti, <i>gtt. xxiv.</i>		
Pil. Sapon. Cast. gr. xii.		
Pulv. Glycyrrh. gr. xii. M.		
12 pills.		
	No. 4.	
B. Ol. Croton. <i>gtt. j.</i>		
Pil. Sapon. Co. gr. ij. M.		
	No. 5.	
B. Ol. Croton. <i>gtt. j.</i>		
Pulv. Opif. <i>gtt. j.</i>		
Cerne Flave, gr. iij. M. Pil.		
	No. 6.	
B. Ext. Colch. Acet. <i>gr. j.</i>		
Pulv. Tragac. gr. j. M. Pil.		
	No. 7.	
B. Hydr. Chlor. <i>gr. iii.</i>		
Magnes. gr. j. M. S. A.		

[September 15, 1860.]

ON CHLORAL. COMMUNICATED BY D. HANBURY, F.R.S.

The President exhibited a specimen of the hydrate of chloral, a white crystalline solid substance, which promises to become an important therapeutic agent. Chloral is formed by acting on alcohol with dry chlorine gas, and the hydrate is produced by the reaction of chloral and water. According to the researches of Liebreich and Richardson, when hydrate of chloral is introduced into a living body by subcutaneous injection, chloroform is gradually liberated under the influence of the blood, sleep being induced.

NOTES ON CERTAIN RARE ESSENTIAL OILS. BY D. HANBURY, F.R.S.

The President exhibited to the meeting authentic specimens of the following, viz.:—

Essential Oil of Canella alba.

"	Clove Bark or Culitlawang.
"	Chian Turpentine.
"	the leaves of <i>Pinus sylvestris</i> .
"	" <i>Pumilio</i> .
"	the cones of <i>Abies pectinata</i> .
"	<i>Ptychosis Ajowan</i> .
"	<i>Origanum vulgare</i> .
"	Mexican Lignaloë.

With regard to that obtained from the leaves of *Pinus sylvestris*, and sometimes called Fir-wool Oil, he observed that, administered by inhalation, it has of late been recommended in certain diseases of the throat and respiratory organs. Dr. Morell Mackenzie, by whom in this country it has been chiefly prescribed, has also employed the essential oil of the leaves and twigs of *Pinus Pumilio*, a pine which covers many of the barren limestone slopes of the Southern Alps at an elevation of 4,000 to 7,000 feet. This pine is closely related to the common Scotch fir (*Pinus sylvestris*), but has a curious decumbent habit of growth, giving it the aspect of a shrub of six feet high with long branches spreading along the ground: seen covering the mountain-side, it might at a distance be mistaken for furze (*Ulex Europea*). The essential oil is distilled at Reichenhall, in Bavaria, as well as in other places, and held in high estimation by the Germans, who use also an aqueous extract made of the leaves, and other preparations. The oils of *Pinus sylvestris* and of *P. Pumilio* have been prescribed in England, in the form of emulsion made thus:—

R. Olei Pini Sylvestris, 5ijss
Magnesia Carbonat, 5iss
Aqua Destillata ad, 3ijj

Misce.—One or two tea-spoonfuls in a pint of warm water to be inhaled (from an inhaler) for ten minutes twice a day. Dr. Mackenzie has also prescribed the oils of *Abies pectinata* of Cajeput, of hops, and of sandal wood. The specimen of oil of *Abies pectinata* was distilled from the cones in the neighbourhood of Berne. In odour it resembles the fine, transparent and fragrant turpentine which is yielded by the trunk in very small quantity, and which was formerly found in the shops under the name of Strasburg Turpentine. The oils of canella, Chian turpentine, ptychosis, and origanum were distilled for chemical examination, and have not been employed in medicine. That of lignaloë is used in Mexico as a perfume.*

CARBOLIC ACID AND HUMAN PARASITES. BY T. A. READWIN, F.G.S. (Abstract.)

Having referred to the various parasites discovered on and in the human body, and given ample evidence in support of the conclusion that minute forms of animal and vegetal life are connected with some of the most common diseases, the author called attention to the fact that carbolic acid, in a dilute form, would destroy all the low forms of life. This antiseptic agent is freely soluble in glycerine, which is a very powerful healing agent, and the united application of carbolic acid and glycerine has been found of extraordinary service in the treatment of many dangerous diseases. The following practical observations on the employment of these new therapeutic agents were given by the author:—

As a rule, it is better to dissolve the crystallized carbolic

* Some account of the wood from which it is obtained will be found in a paper by Mr. Collins in the *Pharm. Journ. and Trans.* for April, 1860, p. 590.

acid (Calvert's) in the proportion of one part by weight of the acid to six of glycerine (carbolate of glycerine). In this state it can be diluted equally indefinitely.

In general, a dose of carbolic acid is 1 grain in an ounce of water.

As a gargle, 1 or 2 grains to an ounce of water.

As an injection, 1 grain to 4 ounces of water.

As a lotion, 15 grains to an ounce of water.

As an ointment, 30 grains to an ounce of benzotized lard.

As a liniment, 1 grain to 20 of olive oil.

As a plaster, 1 part of carbolic acid to 3 parts of shellac.

The crystallized carbolic acid to be used as a caustic.

The carbolate of glycerine, as above, should be used in 1 or 2 drop doses.

Antiseptic oil for abscesses, 1 part of acid to 4 of boiled linseed oil.

Antiseptic putty, 6 spoonfuls of the antiseptic oil mixed with common whiting.

Aqueous solution of carbolic acid is 1 part of acid to 40 of water (1 ounce of acid to a quart of hot water well agitated and filtered).

Sick-rooms, to disinfect: place a portion of the dissolved in a porcelain dish, and float it in a larger vessel of hot water.

Disinfecting purposes generally: 1 pound of crystals to 6 gallons of water. Fluid, 1 part to 80 of water. Powder, 1 ounce of crystals with 4 pounds of slaked lime.

For drains: take 1 pound of the fluid carbolic acid to 5 gallons of warm water.

Toothache is often cured with 1 drop of carbolite of glycerine; and diarrhoea arrested in half an hour with 2 drops.

In all cases of parasitic life it is advisable to commence with very dilute carbolite of glycerine.

ON THE DETECTION OF FIXED OILS IN PLANTS. BY T. T. P. BRUCE WARREN, F.E.S. (Abstract.)

The process recommended by the author for detecting, on a small scale, the existence of fixed oils in vegetable substances may be thus briefly described: The recent emulsion obtained by expressing the juices from the plant, is first treated with hydrochloric acid, to precipitate any caoutchouc that may be present. The latter collects as a white tenacious mass on the surface, and is to be completely removed. The residual liquid is strongly agitated with bisulphide of carbon, and, after digesting for some time, the supernatant part is poured off. The bisulphide will have dissolved the fatty matter contained in the juice, and this fatty matter may be at once recognised by the addition of a few drops of dichloride of sulphur, which will give a granular precipitate insoluble in ether, chloroform, and bisulphide of carbon.

THE STRENGTH OF DIFFERENT SAMPLES OF DONOVAN'S SOLUTION. BY W. E. HEATHFIELD, F.C.S. (Abstract.)

The author called attention to the various alterations in the formula for Donovan's solution that have been proposed by pharmaceutical writers. He admitted that alterations in the mode of manipulation were perfectly legitimate; but he contended that no one was justified in altering the proportions of a preparation intended for public use without leave of the introducer. Dr. Donovan had in view a preparation which he seemed to have perfected, and he liberally published his formula. He admitted the difficulty of producing the combination with celebrity, but he was fairly entitled to claim from pharmacists a rigid adherence to his formula, as far as regards the proportions indicated. The author considered Dr. Donovan's formula deserving of all commendation, and asserted that, with pure materials, and due attention to manipulation, it would yield a preparation of definite composition, having invariable properties. Thus:—

Pure Arsenic resublimed	6 oz.
Pure Distilled Mercury	14 62
Iodine resublimed	49
Alcohol, 1 drn. or q. s.	
Water	8 oz.

The arsenic should be in the finest possible condition; the more minute, the more rapid the combination with the iodine. This combination should be first made with the addition of a little water, sufficient of the iodine being used

for a perfect union; this should be carefully dried, and the remainder of the process completed by the entire and effective combination of the iodine remaining, together with the mercury, the iodide of arsenic, and as much of the alcohol as may be required. The proportion of water being added to make up eight ounces, there should result a solution of a permanent character, both physically and chemically. Dr. Donovan found that when the trituration of the ingredients was continued until the alcohol became as thick as treacle, he obtained the most effective and complete solution. This might be left to the operator, provided it be borne in mind that there should be no residue whatever. The process of Dr. Donovan might be recommended for adoption, with these precautions, until the framers of any future Pharmacopeia saw fit to authorise the recommendation of any other.

Four papers contributed by Mr. Wentworth Lascelles Scott arrived too late for reading, but they will, probably, appear in the volume of Transactions.

The meeting passed votes of thanks to Messrs. Cooper, Husband, and Palk, and their associates on the Exeter Local Committee, to the President, and to the chief officers of the Conference.

COMPLIMENTARY DINNER.

On Thursday evening, August 19th, the chemists of Exeter gave a dinner to their visitors at the London Hotel. Mr. G. Cooper occupied the chair, and Mr. Palk the vice-chair. The entertainment was well adapted to give the visitors a most favourable impression of the hospitality of the citizens of Exeter. After the usual loyal oaths,

The CHAIRMAN called upon the assembled guests to drink "Success to the British Pharmaceutical Conference," and in associating with the toast the name of Mr. Daniel Hanbury, he gracefully commented on the services which that gentleman had rendered to pharmacy.

Mr. HANBURY responded, and likened the Conference to a snowball, which grew larger, and became more firmly consolidated as it progressed. He announced that Mr. Hills had presented to the Conference the handsome sum of fifty guineas, of which ten guineas would be applied to the purchase of books for the chemists' library in Exeter, and that he had further promised to place in the room where the local meetings were held proof plates of the portraits of Jacob Bell and William Allen. Mr. Hanbury concluded by proposing the health of Mr. Hills.

Mr. HILLS, in returning thanks for the compliment paid him, said that he had often felt the want of books when young, and that he hoped that his proposed application of his contribution would pleasantly remind the young men of Exeter and other towns of the visits of the Conference. What he wished to do was to promote by all the means he could command, the objects for which his lamented friend Jacob Bell had so strenuously laboured.

The toast of "The Officers of the Society" was responded to by Mr. Brady, Mr. Reynolds, and Dr. Attfield. The latter, in a short but eloquent speech, remarked that the Pharmaceutical Society had been greatly benefited by the proceedings of the Conference.

The toast of "The Visitors from a distance" was acknowledged by Mr. Morson and Mr. Evans, the President of the Pharmaceutical Society.

Mr. Palk proposed "The Visitors from Torquay," and the toast was responded to by Mr. E. Smith and Mr. Narracott.

The remaining toasts were:

"The Pharmaceutical Press," coupled with the name of Mr. Brough, who responded in his usual manner.

"The Chairman," proposed by Mr. Ince, and acknowledged in a most genial spirit by Mr. Cooper.

"The Exeter Chemists," proposed by Mr. Hanbury, and responded to by Mr. Husband and Mr. Palk.

"The Contributors of Papers," acknowledged by Mr. Stoddart.

EXCURSION OF THE PHARMACISTS TO TORQUAY.*

The members of the Pharmaceutical Conference having been invited by the local chemists to visit Torquay, on Friday, August 20th, a goodly number started by early train from Exeter, arriving at Torquay shortly after eleven.

At the station, they were met by the Torquay chemists, with breaks and other conveyances, and after some few moments spent in recognition, etc., the party started for Watcombe, the first point in the day's programme. Within a few yards of the station, Torbay suddenly bursts in full view, arresting the attention of all by its wonderful beauty; the deep blue of the water, and the white-tipped waves, contrasting so charmingly with the warm red of the sandy shore and rocky cliffs. Historically, this bay has great interest. It was at Brixham, the southern shore of the bay, that the Prince of Orange landed some 200 years ago; in this bay Napoleon was detained a prisoner on board a British man-of-war for some time, previously to his removal to St. Helens; it was here, too, that many ships of the great Spanish Armada took refuge from the storm which overtook them—some of them were captured by the local volunteers of those days, and placed in durance in a large building connected with old Torre Abbey, and which to this day retains its name of the Spanish Barn. This building, and a portion of the old Abbey, were conspicuous in the fields on the left of the road. Next to the Abbey is the marine residence of Miss Burdett Coutts, who spends much of her time here.

The party, proceeding along the winding road under the cliffs, and along the shore, entered the town, and passing along the Strand, Union-street, and through the Rocky Valley, with its very pretty natural arch on the right of the road, shortly espied Watcombe. Here the party alighted, and at once separated into lively units of motion, some admiring the ivy-crowned masses of conglomerate rock which rises in tower-like masses nearly 300 feet in perpendicular height, having the appearance, and giving one the idea of some monster castle in ruins; others racing down the grassy slopes overlooking the sea. A flock of sheep occupied the rear-ground, the deep blue sea in the middle distance, and the retiring lines of coast stretching as far as the eye could see, taking in the Dorset coast as far as Portland Bill. Many and warm were the expressions of admiration elicited by the wonderful and beautiful scenery around. The late Mr. Brunel, the eminent engineer, selected this beautiful spot for a residence, and purchased grounds, and planted rare ornamental trees, shrubs, etc., but did not live long enough to construct more than the foundation of his intended mansion.

But now the bugle sounds the assembly, and once more a start is made. This time for Babacombe, the second point in the programme. A drive of ten or fifteen minutes past the fine old parish church reveals Babacombe Down and Bay; at once a halt is ordered; on the lawn in front of the hotel, luncheon had been prepared for the visitors. The work of demolition speedily commenced, and under the influence of an invigorating sea breeze, everyone seemed thoroughly and earnestly anxious to do full justice to the immediate work before him. After luncheon, the visitors separated in groups, admiring with the greatest possible enthusiasm the rich and varied scenery. Taking in a greater expanse than Watcombe, and standing on the Downs, an eminence some 200 feet immediately above the sea, Davlish, Teignmouth, Exmouth, Lyme Regis, etc., can easily be seen; Petit Tor, at the base of the rocks, whence comes the so-called Torquay marble, at present worked by a local firm, was especially remarked. Some members were fortunate enough to secure beautiful and instructive specimens. The magnificent white pebble beach, contrasting so charmingly with the red conglomerate on the one hand and the grey limestone on the other, combined with the soft cadence of the rippling waves, gave a singular charm and beauty not to be surpassed in any part of her Majesty's dominions.

From Babacombe, the greater number of the party, headed by one of the local members, made a pedestrian tour across the down, meeting the carriages at Anstis Cove. The walk across the breezy down was one of unparalleled beauty;

* This interesting account of the Torquay excursion is from the pen of Mr. Edward Smith, a gentleman who took a leading part in the scientific proceedings of the Conference, and who spared no exertions to render the excursion a memorable one.

it was intensely gratifying to see how the more venerable members vied with the more juvenile portion in litheness of limb and buoyancy of step. "Ride past this scenery?" "No," said the venerable Mr. Morson, "I'll walk;" and immediately set off at the double, with a lightness and exhilaration perfectly wonderful. Some of the party, carefully threading the footpath down to the beach, and passing through the ravines, or over the immense boulders of limestone which here took the place of the conglomerate, soon reached Anstis Cove; the less venturesome, passing along the edge of the down, soon arrived at the same romantic spot.

Leaving Anstis Cove, a very short drive brought the party to Kent's Hole, a remarkable limestone cavern, which is being scientifically and carefully explored at the expense of the British Association, and under the personal superintendence of Messrs. Vivian and Pengelly. Here, Underhay, the guide, took charge; lighted candles were presented to each one, as well as a supply of magnesium wire. After a few introductory remarks by the guide, a move was made along a corridor and through several passages, until a large chamber was reached. Here the guide again offered some further explanation. The burning of the magnesium wire had a very peculiar and weird effect, illuminating the most remote and intricate recesses, here and there the stalactite depending from the passages, glittering and reflecting with diamond-like brilliancy. It was peculiarly interesting to hear that in this chamber had been discovered the remains of many extinct animals, besides the bones of others having modern representatives. The bones of the hyena, tiger, elephant, besides flint implements and other ancient remains of human workmanship, as spindles, whorls, cut bones, etc., have been dug out in abundance, all testifying to the very great age of the cavern. The return from this chamber through "the oven," and back along the corridor into daylight, was soon accomplished.

The next point visited was Daddy Hole Plain, overlooking the British Channel and Torbay. The chasms in the rocks here afforded much interest. The eye taking in at a glance the whole of Torbay, from Berry Head on the south to Daddy Hole on the north, nothing could exceed the picturesque loveliness of the landscape from this spot: on one side could be seen Dartmouth in the distance, Hay Tor, and other eminences; on the other, the several ranges of hills, amidst which the Dart winds its way past quaint old Dartmouth to the sea, Torbay lying beneath in all its loveliness, dotted here and there with graceful yachts skimming the surface of the buoyant waves, and reflecting their snow-white sails in the transparent water.

By the kind permission of R. Harvey, Esq., the party strolled through the beautiful grounds of Rockend, arriving at the Royal Hotel shortly before five o'clock.

After a very short interval, the whole party, numbering about seventy, with the ladies, sat down to dinner. The proceedings, which were now of a very practical character, were enlivened by the strains of a military band, and after sundry loyal and other toasts, the Exeter visitors proceeded to the station in carriages provided for the purpose, amid the cheers and congratulations of all around, the band meantime eloquently appealing to one's best feelings by striking up the fine old air, "Auld lang Syne." The excursion thus passed off without the slightest hitch to mar the pleasurable enjoyment of the scenery visited. Not the least enjoyable feature was the presence of the ladies, who were especially invited to join the party in the breaks, and at dinner, and who thus gave a charm and gracefulness and completeness to the whole day's proceedings.

ARRANGEMENTS FOR 1870.

The proceedings of the Exeter Meeting were brought to a conclusion on Tuesday, August 24th, when the members of the Committee and the officers of the Society assembled at the private residence of Mr. Cooper. It was decided that the next meeting should be held at Liverpool, on the occasion of the visit of the British Association to that town, and that Mr. W. W. Stoddart, F.G.S., should be requested to accept the office of President. Some alterations were made in the list of officers, and a formal vote of thanks was passed to the Exeter Local Committee.

Veterinary Notes.

BY W. HUNTING, M.R.C.V.S.

COUGHS.

ALTHOUGH heading this article Coughs, I shall treat, but not minutely, of some of the complaints in which cough is a prominent symptom.

I choose this arrangement because the various coughs are too often treated on the same plan; and I hope that these rough notes, by suggesting a question or two for guidance, may enable prescribers to act with greater effect.

A cough is the symptom of some derangement of a portion of the respiratory organs. That all coughs should not be treated in the same manner is evident from the variety of causes—Irritation of the larynx, air tubes or lung, pneumonia, pleurisy, and some nervous derangements all give rise to coughing.

In nearly all these affections some difference in the treatment of the cough is necessary. A correct diagnosis in each case requires a knowledge of some other symptoms beside the cough; this of itself, however, is so different in sound and quality, depending upon its cause, as to give a very fair indication of its nature. We will now notice a few of the most common affections giving rise to a cough.

Irritation of the larynx, the most common cause of cough, may be due to inflammation of its lining membrane, or to the presence of a foreign body. In the latter case its removal is necessary; and then we have exactly the same condition left, as long as it remains as in idiopathic inflammation, viz., an irritation of the sentient nerves of the larynx. The impression is carried by these nerves to the brain, and is there directed by the motor nerves to certain muscles, and a cough is the result.

It must be remembered that coughing is not always an effort to expel some obstruction, but is a nervous action depending upon irritation of sentient respiratory nerves. It is true, coughing is the means by which obstructions are removed from the air tubes, but only because those obstructions cause irritation, which, of itself, without any obstruction, produces coughing. I have dwelt upon this point, as expectorants are used most indiscriminately. To return to irritation of the larynx, it may be acute or chronic. In the acute stage, at first the cough is loud and hard, owing to checked secretion; it soon, however, becomes softer as the membrane is covered with purulent mucus. Diagnosis is helped by the fact that swallowing is difficult, even water, during attempts at drinking, being returned through the nose. Treatment—Dry hard food must be avoided; and in giving medicines do not use the form of balls or draughts, the former are nearly certain to be coughed back, and may sit lodged in the nose, an awkward accident, whilst draughts require the head elevating in a manner favourable to choking. Electuaries are the best form. I cannot advise blisters or stimulant applications to the throat; but can speak positively to the advantage of hot water. The best way of applying it, is to place a roll of flannel in hot water, wrap it round the throat, and cover it with some waterproof substance. There is no necessity to wet that portion over the neck and poll.

As regards medicine, keep the bowels open, and use a sedative and astringent electuary as

Camphor, 5*gr.*

Ext. Belladonnae, 5*gr.*

Acid. Acetic. Dil. 5*fl. oz.*

Honey or treacle, 3*oz.*

A tablespoonful twice a day, to be smeared on the tongue; or this:—

Tannin, 3*j.*
Sp. Vini Rect., 3*j.*.
Honey, 3*x.*
To be given as above.

Chronic irritation of the larynx requires a different treatment; the cough here is loud and hard, but not so frequent, occurring chiefly when the animal is changed from the stable to the fresh air, or vice versa. There are no general symptoms. Cough balls are here, if anywhere, of use. I give a form or two:—

Opii Pulv., 5*s.*

Scillæ Pulv., 3*j.*

Aloes Pulv., 3*j.* One every day.

Make into a ball with common mass or linseed meal and treacle.

Camphor,
Opium, } 3*s* each.
Digitalis,

Make as above. One every day.

Ext. Belladonna,

Ext. Hyoscyami, } of each 3*j.*

Ipecacuanha,

Made and given as above.

Blisters to the throat afford relief in some cases; or setons may be used, and have the advantage that an animal may continue at work, supposing it to be easy and weather favourable.

Irritation of the larger air tubes is met with in cases of bronchitis and asthma, the latter more common in dogs than horses, but so rare as to need no details here.

Bronchitis, or inflammation of the lining membrane of the air tubes, is accompanied by a cough which may be characterised as a harsh, wheezing sound. This is accompanied by a loud, rough noise in the windpipe.

The treatment is general and local. General treatment on the plan recommended for simple fever. Local treatment consists in protecting the neck and chest with rugs, etc., and in chronic cases applying blisters. In this disease there is an obstruction in the air tubes of purulent mucus, for which those who believe in expectorants may add Ipecac. and Tartar Emetic, of each half a drachm, to the following ball:—

Camphor, 3*j.*

Digitalis, 3*s.*

Potas. Nit., 3*s.* One every day.

Linseed meal and treacle to form a ball.

We have a cough in pneumonia and pleurisy, but these are diseases of such severity as to require a fuller consideration than we can now give. We will therefore pass on to broken wind, a disease in which the cough is almost diagnostic. It is short, loud, and hollow. The only other symptom requiring mention is the double action of the flanks in expiration.

There is some doubt as to the pathology of this disease. A post-mortem examination of an old standing case generally shows the lung to be emphysematous, i.e., it presents little bladders on its surface due to a rupture of the smaller air cells; but we find this condition of lung in some animals which, during life, showed no symptoms of broken wind. We also meet with cases of broken wind showing no change of lung. We know, too, that broken wind is generally due to bad feeding, and that musty hay has produced it in a few days. We have, then, conclusive proof that it is often nervous disorder. For my part, I believe very few, if any, cases are brought on by great straining effort, causing ruptured air cells.

The treatment must include attention to diet, which should be of the best quality, and not in too great quantities.

Avoid bulky unnutritious food; but above all mouldy or dusty hay. Linseed, boiled, and then given cold with the corn every night, has a marked effect in some cases. As regards medicine, there are two which are followed by good results—Arsenic and Creosote. How they act I know not, but have seen great relief follow their use, especially arsenic, which is given in three grain doses daily. Creosote is given in half drachm doses in the form of ball, made with linseed and treacle.

Horse-copers are very adroit at what is called "loading" broken-winded horses. By some means they produce a temporary relief, during which an animal is sold as sound. I have heard a man boast that he could so "load" one as to insure his passing through a veterinary examination undetected.

This loading consists in giving a mixture of shot and tallow to the animal about half an hour before showing him. Others trust to a pint of olive oil; while some add a preliminary course of tar balls.

Abstracts of Foreign Papers.

SO-CALLED SWEET QUININE.

IN the *American Journal of Pharmacy* Mr. WILLIAM PROCTOR draws attention to a composition recently thrown into the market, under the name of "sweet quinine," the manufacturer of which states in his trade circular that it consisted of quinine, associated with liquorice sugar. Having subjected the article in question to the ordeal of chemical examination, the author makes public the fact that it does not contain any quinine at all, but mainly cinchonine, precipitated from the sulphate, dried and triturated with an impure glycyrrhiza, prepared from liquorice root. The tastelessness of "sweet quinine" is due to the very difficult solubility of cinchonine, which requires very nearly 4,000 parts of cold water; with acids or alcoholic fluids, which salify or dissolve it, its bitterness becomes apparent.

GLYCERINE AS A PRESERVATIVE.

In the *Neues Jahrbuch für Pharmacie* we find that glycerine is recommended by Dr. KOLLE as a substitute for spirits of wine, for the preservation of zoological and anatomical preparations. The author recommends concentrated glycerine as being cheaper, not liable to evaporation, not combustible, and more particularly as a better preservative of the natural colours of the various preparations usually kept and preserved in spirits of wine. In the author's opinion glycerine answers this purpose in a most satisfactory manner.

MANUFACTURE OF SPIRITS OF WINE FROM INDIAN CORN.

A paper, of more especial interest to distillers, is published in the *Polytechnische Journal von Dingler*, by Dr. SCHULZTE, concerning the use of maize, as a source of spirits, and the methods adopted in the manufacture in Hungary. Our readers may be interested to know that it is found necessary, by experience, to steep the ground meal for twenty-four hours in water, containing sulphurous acid, in solution. It is then boiled, and, having cooled, is mixed with green barley malt, the operation being continued in a manner which will be obvious to our readers. The quantity of alcohol obtained from this material is stated to be large, and the quality good.

CORALLINE NOT A POISON.

M. GUYOT publishes in the *Comptes Rendus* an account of the results obtained from an elaborate and exhaustive series of experiments on the physiological action of coralline. The author proves conclusively that coralline neither when

[September 15, 1869.]

taken internally, in large or small doses, nor when brought directly into the blood, is a poison; and that there is no danger in its use as a dye, except from the fact that it is frequently associated with poisonous substances, which of course must be avoided.

POTATO SUGAR AND STARCH.

Mr. Bartal presented at the last meeting of the Franklin Institute samples of sugar and starch made from potatoes, and the following analysis, made last November, of the juice of sweet potatoes from North Carolina:—Sugar, 10·50; starch, 6·00; various salts, 1·17; gum, etc., 0·33; and water, 82·00 in 100 parts. Powerful presses will extract 90 per cent. of the weight of the potatoe in juice; the density of this juice is 10° Beaumé = 1·075 sp. gr. The author states that such potatoes will yield 6·18 per cent. of sugar and 5 per cent. of starch; but by improved culture, as evidenced in Europe in the cultivation of beet-root, this quantity may be largely increased.

BICARBONATE OF AMMONIA AS A PHARMACEUTICAL PREPARATION.

Wm. Proctor states in the *American Journal of Pharmacy* that he has used bicarbonates of ammonia in the place of bicarbonate of soda, to which it is preferable both as an antacid and in virtue of its somewhat stimulating powers. In reference to the formation of this salt, the author says:—It is well known to druggists that considerable quantities of this salt are formed on the sides of casks in which carbonate of ammonia is imported, and other portions are derived from the accidental or careless exposure of the sesquicarbonate of ammonia, whereby an equivalent of mono-carbonate is lost. It has been usual to reserve the salt thus obtained for forming acetate, nitrate, or other ammoniacal salts; but it is rarely used medicinally on its own merits. If it were sufficiently abundant, or could be prepared cheaply by a direct process, it would form the best yeast powder that can be offered, since it contains a larger portion of carbonic acid than any of the alkaline bicarbonates except that of lithia, which is, of course, unsuited to this use. Bicarbonate of ammonia in its purest state is a white salt, isomorphous with bicarbonate of potassa, and possesses the same crystalline form; its composition is expressed by the formula $\text{NH}_4\text{O}_2\text{CO}_2\text{HO}$; its taste is saline, with a slight ammoniacal impression, and is slowly volatile when exposed, and gradually evaporates with a slight odour of ammonia; it is soluble in eight parts of water at 60° F., and its aqueous solution exhibits an alkaline reaction with syrup of violets; it is decomposed by the heat of boiling water, giving off carbonic acid; it is nearly insoluble in strong alcohol, but soluble in 60 parts of dilute alcohol; it is readily prepared on the small scale, by dissolving out the mono-carbonate from the powdered sublimed sesqui-carbonate (which consists of one equivalent of each salt) by means of alcohol of 85 per cent., in which the bicarbonate is almost insoluble. When a saturated solution of sesqui-carbonate of ammonia in water is saturated with CO_2 , a quantity of the bicarbonate separates in crystals, owing to its less solubility.

Pharmaceutical Society of Great Britain.

*Meeting of the Council, August 4, 1868.**

Mr. H. Sugden Evans, President, in the Chair.

PRESENT.—Messrs. Abraham, Bottle, Bourdais, Carteighe, Edwards, Haselden, Hills, Morsom, Randall, Savage, Squire, and Williams.

The minutes of the previous meeting were read and confirmed.

The report of the Finance and House Committee was presented, showing on the General Fund account a balance in the Treasurer's hand of £1,345 15s. 9d., and submitting for payment accounts, commission, and various items, amounting to £362 3s. 0d., and on the Benevolent Fund account a balance of £405 7s. 10d.

Resolved.—That the report be received and adopted, and payments made.

The report of the Library, Museum, and Laboratory Committee was received and adopted.

Letters from the Privy Council were read, intimating that Dr. Edward Headlam Greenhow had been appointed to be present, from time to time, on behalf of the Privy Council, during the progress of such of the Examinations of the Society as are held in London; and that Dr. Christison had been similarly appointed to attend the examinations held in Scotland.

The Board of Examiners for England and Wales reported that during the previous month they had examined 188 candidates, and passed 148; and that Dr. Greenhow had attended at their Examinations on the 21st, 23rd, and 29th of July; that eight candidates presented themselves for the Junior Bell Memorial Scholarship, and one for the Senior Scholarship.

On the report of the Board, and examination of the testimonials as to character, etc., of the respective candidates, it was

Resolved.—“That the Junior Bell Scholarship be awarded to Charles Fryer, of Guildford, and the Senior to William Foster, of Bridlington, with free laboratory instruction for the Session 1869-70.”

The Board reported that, during the past Session, fifty-eight candidates had passed the Minor Examinations in honours, of whom nineteen had competed for the Prize of Books.

On the report and recommendation of the Board, the prize was awarded to John William Gilbert Candy.

The Board of Examiners recommend that, taking into consideration the difficulty of uniformly selecting suitable examiners in the country to conduct the First or Preliminary Examination, the anxiety and time the proposed arrangements would necessarily entail on the Council and Society's Staff, together with the questionable power of the Council to make such appointments satisfactorily, it would be desirable for the Board to set the questions and examine the answers, and that there should be four examinations in the year, viz., in January, April, July, and October.

In the case of Candidates residing in the country, and unable to attend at Bloomsbury-square, the Secretary shall send the questions, under seal, to the person appointed to superintend the writing of the answers, with instructions that they be opened by him in the presence of the candidate, who shall write the answers forthwith in his presence in a given time; the answers to be forwarded, under cover to the Secretary, by the following post, accompanied by the Superintendent's certificate to the effect that they were written in the time specified, under his supervision, and without assistance from books or other sources.

It was, therefore, moved by Mr. Carteighe, seconded by Mr. Williams, and resolved—“That the resolution passed at the Meeting of Council on the 7th ult., in reference to this Examination, be rescinded.”

It was moved by Mr. Abraham, seconded by Mr. Edwards, and resolved—“That the recommendation of the Board of Examiners, respecting the mode of conducting the First or Preliminary Examination be adopted, but that

* From the *Pharmaceutical Journal*.

the frequency of the Examinations be left to their discretion."

The Board of Examiners for Scotland reported that, during the month of July, they had examined twenty candidates, and passed seventeen.

SESSIONAL PRIZES.

The professors presented their respective Reports of the results of the competition for the Sessional prizes offered by the Council, which, having been read, the following awards were declared:-

CHEMISTRY AND PHARMACY.

Bronze Council Medal...John Ingham.
Certificate of Honour ...Edward Alfred Webb.
Certificate of MeritJoseph Elijah Barnes.

BOTANY AND MATERIA MEDICA.

Bronze Council Medal...Walter Henry Smith.
Certificate of Honour ...John Ingham.
Certificate of MeritFrederick Beasley.

PRACTICAL CHEMISTRY.

Bronze Council Medal...John Ingham.
Certificate of Honour ...George Iredale.
Certificates of Merit { Joseph Hicking, William Wyley,
and Edward Histed.

The Professor of Botany reported that five Herbaria had been received in competition for the Botanical Prize.

The following awards were made:-

Silver MedalHenry Williams Jones.
Bronze MedalGeorge Frederick Stoodley.
Certificate of Honour ...Ralph Tait Linton.

It was moved by Mr. Bottle, seconded by Mr. Savage, and resolved—"That the Annual Report of the Council be sent to every member of the Society at least three days prior to the day appointed for the Annual Meeting."

It was moved by Mr. Bottle, seconded by Mr. Squire, and resolved—"That the Parliamentary Committee be requested to take cognizance of all cases of infringement of the Pharmacy Acts of 1852 and 1863, and report to the Council thereon."

Mr. Hills withdrew the motion of which he had given notice last month, respecting the International Pharmaceutical Congress.

Mr. Abraham gave notice that at the October Meeting of the Council he would propose that steps be taken to assimilate the laws which regulate the practice of pharmacy in Ireland and Great Britain respectively.

[One pharmaceutical chemist was elected a Member; twenty registered chemists and druggists were elected Members; twenty-six gentlemen were elected Associates.]

POISONING CASES.

BY VERMIN POWDER.

A CASE of poisoning occurred a few days ago, at Torriss-holme, near Lancaster. A young woman, named Clifford, was engaged to be married to a young fisherman. Her lover neglected to have the banns published, and she grieved about it sadly. On the 1st instant she purchased a packet of vermin powder, which she took, and died within an hour afterwards. The chemist, it is stated, who sold the powder, said a threepenny packet contained enough strichnine to kill five adults; yet he did not register the sale of the powder, because he did not consider it came under the Sale of Poisons Act.

BY SULPHURIC ACID.

A young girl, aged ten, daughter of Mr. James Doherty, of Regent's-place, Birmingham, died on the 4th inst., from accidentally drinking some sulphuric acid from a bottle she had found in her father's chiffonier.

FROM OPIUM EATING.

On the 30th ult. an inquest was held by the Mr. Myers, on the body of Benjamin Barton, at Wheelton, near Chorley, Deceased was lying on a bench on the previous Saturday, in the Free Church Methodist School, Wheelton, of which he had the cleansing. He was breathing heavily at the time of discovery, and never recovered consciousness. It was shown that the deceased was in the habit of eating opium, a quantity of which drug was found upon him; and that he took it, as he had informed a person, to wean himself from the use of tobacco. The jury returned a verdict of death from taking opium, not knowing its danger.

THE ALLEGED POISONING AT NEWPORT.

On the 3rd inst. the coroner's inquiry touching the death of Miss Collier, was resumed, at the Queen's Hotel, Newport, who was supposed to have been poisoned by a boy named Charles Gritt, who was in the employ of deceased's father, at Newport. The lad was stated to have put some vermin powder amongst some wheat, which he had given deceased to eat. Dr. Taylor having made an analysis of the whole of the internal organs of deceased, stated that no trace of poison could be found. Every part had been submitted to the usual tests for the detection of mineral and vegetable poisons, more especially arsenic, antimony, mercury, and their mineral compounds, strichnia, morphia, Butler's vermin killer, and the results were the same.



CHAP. 117.

An Act to amend "The Pharmacy A.D. 1869.
Act, 1868."

[11th August, 1869.]

WHEREAS it is expedient to amend the pro-
visions of the Pharmacy Act, 1868, in
regard to duly qualified medical practitioners and
veterinary surgeons, and in other respects:

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. Nothing contained in the first fifteen sections Reserving of the recited Act shall affect any person who has certain rights of been registered as a legally qualified medical practitioner before the passing of this Act; and the said clauses shall not apply to any person who may hereafter be registered as a legally qualified practitioner, and who, in order to obtain his diploma for such registration, shall have passed an examination in pharmacy; nor shall the said clauses prevent any person who is a member of the Royal College of Veterinary Surgeons of Great Britain, or holds a certificate in veterinary surgery from the Highland and Agricultural Society of Scotland, from dispensing medicines for animals under his care.

2. The time within which certificates may be Period with-
in which the said Act, by persons employed as assistants certain
before the passing of the said Act, shall be ex-
tended to the thirty-first day of December one thousand and four
thousand eight hundred and sixty-nine, and the to be pro-
certificates given under the same section according to Schedule (A.) of this Act shall be sufficient.

Exempting medicine supplied by a duly qualified medical man.

Section 23 and Schedule (E.) repealed.

Schedule F. amended.

3. Nothing contained in section seventeen of the said recited Act shall apply to any medicine supplied by a legally qualified medical practitioner to his patient or dispensed by any person registered under the said Act, provided such medicine be distinctly labelled with the name and address of the seller, and the ingredients thereof be entered, with the name of the person to whom it is sold or delivered, in a book to be kept by the seller for that purpose.

4. Section 23 and Schedule (E.) of the said recited Act are hereby repealed.

5. Schedule (F.) of the said recited Act is hereby altered by substituting for the second column headed "Name of Purchaser" a column headed "Name and Address of Purchaser."

SCHEDULE (A.)

DECLARATIONS to be signed by and on behalf of any Assistant claiming to be registered under the Pharmacy Act, 1868.

To the Registrar of the Pharmaceutical Society of Great Britain.

I hereby declare that the undersigned residing at _____ in the county of _____ had for three years before the thirty-first day of July one thousand eight hundred and sixty-eight been employed in dispensing and compounding prescriptions as an assistant to a pharmaceutical chemist or chemist and druggist, and attained the age of twenty-one years.

As witness my hand this _____ day of _____

186_____.

- A.B. Qualified medical practitioner.
- C.D. Pharmaceutical chemist.
- E.F. Chemist and druggist.
- G.H. Magistrate.

To be signed by one of the four parties named.

I hereby declare that I was an assistant to _____ of _____ in the county of _____

in the year _____, and was for three years before the thirty-first day of July one thousand eight hundred and sixty-eight, actually engaged in dispensing and compounding prescriptions, and that I had attained the full age of twenty-one years at the above-named date.

N.O. Assistant.

CHAP. 112.

A.D. 1869. An Act to prevent the Adulteration of Seeds.

[11th August, 1869.]

WHEREAS the practice of adulterating seeds, in fraud of Her Majesty's subjects, and to the great detriment of agriculture, requires to be repressed by more effectual laws than those which are now in force for that purpose:

Be it therefore enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

Title of Act.

1. This Act may be cited as "The Adulteration of Seeds Act, 1869."

2. In this Act—

The term "to kill seeds" means to destroy by artificial means the vitality or germinating power of such seeds:

The term "to dye seeds" means to give to seeds by any process of colouring, dyeing, sulphur smoking, or other artificial means the appearance of seeds of another kind.

3. Every person who, with intent to defraud or to enable another person to defraud, does any of the following things; that is to say,

- (1) Kills or causes to be killed any seeds; or, Offences in relation to seeds.
- (2) Dyes or causes to be dyed any seeds; or,
- (3) Sells or causes to be sold any killed or dyed seeds,

shall be punished as follows; that is to say,

- (1) For the first offence he shall be liable to a penalty not exceeding five pounds;
- (2) For the second and any subsequent offence he shall be liable to a penalty not exceeding fifty pounds:

Moreover, in every case of a second or any subsequent offence against this Act, it shall be lawful for the court, besides inflicting upon the person guilty of such offence the punishment directed by this Act, to order the offender's name, occupation, place of abode, and place of business, and particulars of his punishment under this Act, to be published, at the expense of such offender, in such newspaper or newspapers, or in such other manner as the court may think fit to prescribe.

4. Any forfeiture or penalty under this Act may be recovered, enforced, and applied as follows:

In England, before two justices of the peace in manner directed by the Act of the session of the eleventh and twelfth years of the reign of Her present Majesty, chapter forty-three, intituled "An Act to facilitate the performance of the duties of justices of the peace out of sessions within England and Wales with respect to summary convictions and orders" and any Act amending the same:

In Scotland, in manner directed by The Summary Procedure Act, 1864, and any Act amending the same, or by any police or other Act for the time being in force in any place, and providing for the recovery of forfeitures and penalties:

In Ireland, in manner directed by The Petty Sessions (Ireland) Act, 1851, and any Act amending the same; and in Dublin by the Acts regulating the powers of justices of the peace, or of the police of Dublin metropolis.

Any jurisdiction by this section authorised to be exercised by two justices may be exercised by any of the following magistrates within their respective jurisdictions; that is to say,

As to England, by any metropolitan police magistrate sitting alone at a police court or other appointed place, or by the Lord Mayor or any alderman of the city of London, sitting alone or with others within the said city:

As to Scotland, by the sheriff or sheriff substitute, or by any police magistrate of a burgh:

As to Ireland, by any one or more divisional magistrate of police in the police district of Dublin, and elsewhere by one or more justice or justices of the peace in petty sessions.

The term "court" shall include the justices, magistrate, or other person or persons before whom proceedings may be had for the recovery of any forfeiture or penalty.

Interpretation of terms.

Septem
ber 15, 1869.
Indict to
defended by
the party
so need be
alleged.

Appeal by
summary
convictio

Limiting
time for
proceedings
under this
Act.

Court may
order proce-
cutor of pa-
roints of un-
reasonable
prosecution.

Other rea-
sons dis not af-
fected.

Intent to defraud particular person need not be alleged.

5. In any proceeding for any offence against this Act, it shall be sufficient to allege that the party accused did the act charged with intent to defraud or to enable some other person to defraud, without alleging an intent to defraud any particular person or an intent to enable any particular person to defraud any particular person; and on the trial of any such offence it shall not be necessary to prove an intent to defraud any particular person or an intent to enable any particular person to defraud any particular person, but it shall be sufficient to prove that the party accused did the act charged with an intent to defraud or with intent to enable some other person to defraud, or with the intent that any other person might be enabled to defraud.

Appeal from summary conviction.

6. In England where the person who is convicted under this Act thinks himself aggrieved by the conviction, such person may appeal to the next Court of General or Quarter Sessions held not less than twelve days after the day of such conviction for the county or place where the conviction is had, in manner and upon the conditions in and upon which a person aggrieved by a summary conviction under the Act of the session of the twenty-fourth and twenty-fifth years of the reign of Her present Majesty, chapter ninety-six, may appeal in pursuance of the one hundred and tenth section of the said Act.

In Scotland and Ireland, in like cases as in England, an appeal shall lie in manner in that behalf provided by the law of Scotland and of Ireland respectively.

A summary conviction under this Act in England shall not be quashed for want of form or be removed by certiorari; and a warrant of commitment on any such conviction shall not be held void by reason of any defect therein, if it is therein alleged that the person therein named has been convicted, and there is a good conviction to sustain the same.

7. Every complaint under this Act against any person in respect of selling or causing to be sold any killed or dyed seeds shall be commenced within twenty-one days from the time of the commission of the offence complained of.

8. Whenever any complaint is preferred against any person under this Act, and the court upon the hearing thereof determines that it is not *bona fide* made upon reasonable and probable cause, it shall be lawful for the court in its discretion to direct and order that the prosecutor or other person by whom or at whose instance such complaint has been preferred shall pay unto the accused person the just and reasonable costs, charges, and expenses, to be settled by the court, of such accused person and his witnesses, occasioned by or consequent upon the preferring of such complaint; and upon nonpayment of such costs, charges, and expenses within fourteen days after the date of such direction and order, it shall be lawful for the court to enforce payment of the same in the same manner as if such costs were a penalty incurred by the person liable to pay the same.

9. Nothing in this Act contained shall prejudice or affect the power of proceeding by indictment or libel in respect of any offence herein provided for, nor shall any proceeding, conviction, or judgment to be had or taken under the provisions hereof against any person prevent, lessen, or impeach any remedy by civil process at law or

Limiting time for proceedings under this Act.

Court may order prosecutor to pay costs of unreasonable prosecution.

Other remedies not to be affected.

in equity which any party aggrieved by any offence against this Act might have had if this Act had not been passed.

10. This Act shall commence and take effect on the first day of May, one thousand eight hundred and seventy.



Exeter Change for the British Lions. Edited by SNUG THE JOINER. London: Benjamin Pardon and Son, Paternoster Row. Sixpence.

THOSE chemists and pharmacists who visited Exeter during the late meeting of the British Association for the Advancement of Science, and doubtless many who were compelled to remain at home, need not be told that the production of "Snug the Joiner" is a tastefully printed pamphlet, devoted to "gracious fooling." For reasons which must not be divulged, we abstain from expressing our own opinion of the merits of the work; but will merely say that the *Pall Mall Gazette*, in a highly laudatory notice wrongly attributed its authorship to the clever scientific humorists who formerly delighted the British Association by their account of the gorilla controversy. That "Snug the Joiner" and his collaborators, "Nick Bottom" and "Peter Quince," are scientific men will be evident from a perusal of their lively pages. In the Prologue the appropriateness of the title is demonstrated, and grave readers are reminded that Science need not always wear academic robes, and that the motley is an agreeable change. The pharmacists assembled at Exeter are addressed by "Snug" in a style which seems to indicate that worthy's familiarity with the proceedings of the Conference:—

"Members of the British Pharmaceutical Conference, a hearty greeting to you also. Rolling stones gather no moss, but they smooth the ground over which they roll. You scientific pill-rollers have made the path of pharmaceutical progress as smooth as a plaster-spreader. President Hanbury, prince of pharmacologists, unless I am much mistaken, you took the chair at Norwich last year, when you proved yourself a second Daniel come to judgment."

A mock-learned "History of the British Association," in which names and dates are jumbled together in a most absurd manner, follows the prologue. In "The Wail of the Mathematician," a close parody of the Laureate's "Locksley Hall," an imaginary associate of Section A, bewails the loss of a faithless one who has transferred her affections to a gentleman of zoological pursuits:—

"Is it well to wish you happy—having known a man like me, When you stoop to pluck a husband from that horrid Section D? Yet it shall be you will lower to his level year by year, Till your taste for abstract science will completely disappear. As the husband is, the wife is: you are mated to a bore, And the coarseness of his studies will degrade you more and more."

He will hold you, when his theories shall have taken proper shape,

Something better than a frog, a little higher than an ape. What is this? his eyes are weary: think not they are dazed with signs.

Go and see: it is a tadpole, that his microscope defines. It may be the creature's lazy, that its heart is like to stop: Touch it with the handy hair-pin, rouse it with an acid drop.

It will wriggle to perfection, if you rightly understand How the habits of the tadpole follow Science's command."

In "The Development Hypothesis," a certain General Fitz-Muddler tries to demolish Darwinism by a series of utterly worthless arguments. This paper attracted much attention at Exeter, and the quiet Swift-like satire of the pretended attack delighted the disciples of Darwin. Among other contributions, we may mention a curious paper "On some recent Spectral Observations;" a classical chemical ode, entitled "Mercurius Rex;" an article "On the Alcoholic

Compound called Punch," in which Professor Tyndall's style is closely imitated; a ballad on the Eoxzon Canadense controversy; and an imaginary report of a meeting held to consider various projects for utilising the Albert Hall of Arts and Sciences, the latter contribution affording various scientific men an opportunity for giving their respective hobbies a little exercise. To scientific men this eccentric sixpenny-worth will be a pleasant memorial of the Exeter Meeting. The verses on the British Pharmaceutical Conference, though inferior to the other poetical contributions in execution, may be quoted without explanatory notes in these columns:—

THE BRITISH PHARMACEUTICAL CONFERENCE.

O Pharmacists! for converses meet,
My thoughtful Muse remembers yet
The day of Sixty-Three,
When the Newcastle-on-Tyne
Some rare good frols did combine
To found the B.P.C.

Brady and Reynolds, able pair,
Atfield and Bentley from the Square,
And Henry Deane the wise,
Have come to the conclusion bold,
That Pharmacy is growing cold
For want of exercise.

Around these active thinkers, see,
Some shining lights of Section, B.,
And pleasant scenes of Wood,
Groves, Proctor, Parkman, and
Sutton and Stanford, chemists good,
And some I cannot name.

Deane for a yearly meeting pleads,
A spirited debate succeeds—
The Conference is born!
The offices are all filled up, [sup]
And now the new-formed members
And don't go home till morn.

Keeping the British Asses path,
The pharmacists now go to Bath,
With pleasure, with a mind, but kind,
But Pooley takes especial care
That no cold water greets them there,
Lest happiness be drowned.

The earliest president is Deane,
That pharmaceutical evergreen,
Whose bark is never rough.
Stoddart from Bristol now appears,
With Schacht and Giles, the Clifton
peasant.
And Matthews, Wade, and Brough.

Again in Eighteen-Sixty-Five
Deane keeps the Conference alive
In Birmingham the black;
Where Dymond like a brilliant shines
'mongst rougher gems that land,
Who only polish lack. [mines,

Another year has winged its round,
And now in Nottingham remained
Good Bentley in the chair;
And Atfield has found a way
To realise his great display
Of products new and rare.

Inspired by Aristotle, Ince,
Essays to make Philistines wince
With Ethics superfine;
But members follow with delight,
The author's plea for what is right,
And one more round.

The year now shifts to fair Dundee,
A town which every linked will be
With bonniness and jute;
And Bentley and his subjects find
That Scotchmen do not lag behind
In Pharmacy's pursuit.

Another change, "tis Sixty-Eight,
Year of Amendment golden date
For pharmaceutical feast;
No staid place, the country round,
For this year's meeting could be
found.

Than Norwich in the East:
Where sitting in the chair of state
See Daniel Hanbury the great,
Whose colour conceals,
Even in his skin, by no mere,
With mines of oriental lore
Such ancient reveals.

The Norwich men long since agreed
That Sutton's measures must succeed,
And they were in the right:

For Norwich now is dear to all
To see the Coriolanus call
To join the meeting bright.

Enter now her turn must take
To entertain, for learning's sake,
The pharmaceutical crew; i (mand,
Her Husband's aid she can command,
And he and Cooper ready stand,
With workers not a few.

Corner for Students.

The chemical formulae employed in this section are based upon the newly system of atomic weights, unless the use of the older system is specially indicated. In the British Pharmacopoeia the symbols corresponding to those adopted here are printed in heavy Clarendon type. The chemical nomenclature generally used in this corner for Students agrees with that adopted in the new edition of *Fowles's Manual of Chemistry*, which is recommended as a text-book.

QUESTIONS.

I. MAGNESIUM SULPHAS, B.P.—What weight in grains of basic sulphate is required for the complete decomposition of 100 grains of this salt?

II. CHLORETTUM.—What is the volume in litres at 12° C. and 755 mm. pressure of the chlorine in 100 grammes of sodic chloride?

III. SULPHURETTED HYDROGEN.—Express symbolically the reaction which takes place when this gas is passed through a solution of mercuric chloride?

IV. $C_2H_4(NO_2)_2O_2$.—Give the name of this substance, and state briefly how it may be prepared?

V. AQUA REGIA.—To what are the powerful solvent properties of this substance attributable?

VI. OZONE.—Does a strip of paper moistened with a mixture of starch and potassium iodide form a trustworthy test for ozone in the atmosphere? Give a reason for the opinion expressed.

VII. HYDROGEN.—Twenty litres of hydrogen at the standard temperature and pressure are burned in air: required the weight in grammes of the water produced.

VIII. FERRUGINOUS CLAY.—A ferruginous clay is boiled in dilute hydrochloric acid. How may the ferric salt in solu-

tion be reduced to a ferrous salt for the purpose of estimating the iron?

IX. DIFFUSIVE POWER OF GASES.—What relation is there between the diffusive power of a gas and its specific gravity?

X. SULPHUR.—How may the quantity of sulphur in a sample of coal be determined?

PRIZES.

We have awarded the First Prize for the Paper on Mercurial Compounds and Preparations to

JOSEPH YOUNG, 16, Gallowtree-gate, Leicester, although his paper exceeds the prescribed length.

The Second Prize is awarded to

ASHBY B. FLETCHER, Totton, Southampton.

Excellent papers have been forwarded by J. W. Evans, A. Fraser, John Gregory, J. Paulin, A. J. Pepper, Joseph Robinson, J. C. Thresh, D. Udale, J. Watts, jun., and A. Weddell, and we regret that we cannot award a prize to each of these competitors. The difficulty of rightly estimating the relative merits of the essays forwarded to us is so great that we gladly resume our system of giving Problems for solution.

Owing to new arrangements for the examination of papers, we cannot in future attend to any communications received at the office later than the 1st day of the month.

The Prize Papers are appended:—

THE MERCURIAL PREPARATIONS AND COMPOUNDS OF THE BRITISH PHARMACOPEIA.

I.

HYDRAEYRUM ($Hg=200$), from Greek, *udor*, water, and *argyros*, silver, also named *Argentum Vivum*, *vel Liquidum*, Quicksilver, and (possibly from its mobility), after the god of merchandise, Mercury, \mathbb{M} . It is a lustrous, fluid metal, sp. gr. 13.589 at 60° Fahr.; freezes at 39.5 below 0° Fahr.; boils at + 662° Fahr. It slowly but constantly evaporates; is imported from California, Southern Europe, etc., in iron cylinders, containing about 75 lbs., and is obtained by distillation from native cinnabar or vermillion ($HgS=232$). It occasionally contains tin, lead, zinc, etc. When these impurities are removed by re-distillation, it should volatilise without residue, and not tail."

HYDRAEYRUM CUM CRETÀ: Mercury with chalk; *Mercurus alkalinatus*; a light, "grey powder," 1 part Hg to 2 parts prep. chalk. If added to HCl , globules of Hg may be recognised with a magnifier, proving its mechanical admixture. Same strength as

PILULA HYDRAB.: Pil. *Corulea*, "Blue Pill." 1 part Hg in 3. If made with sophisticated Conf. Rose, reddened by H_2SO_4 , the poisonous mercuric sulphate ($HgSO_4$) is formed.

UNGENTUM HYD.: Ointment of mercury; *Ung. Coruleum*, "Blue Ointment." 16 parts of Hg in 3, or nearly 1 in 2. This, like the Hyd. c. *Cretà* and Pil. *Hyd.*, is only a minute division of the metal with the lard, etc.

UNG. HYD. COMP.: Compound Mercurial Ointment. $4\frac{1}{2}$ parts contain 2 parts of *Ung. Hyd.* or 1 part of Hg . In place of the obsolete *Ung. Hyd. Mit.*, or "Trooper's ointment."

LINIMENTUM HYD.: Mercurial Liniment. Nearly 1 part of Hg in 6, or 1 part of *Ung. Hyd.* in 3 parts of the liniment.

EMPLASTRUM HYD.: Mercurial Plaster, as a discutient for enlarged joints, etc. Nearly 1 part of Hg in 3 parts of Emp.

EMP. AMMON. c. HYD.: Ammoniacum and Mercury Plaster. For same purposes as last, but more active. 1 part of Hg in about 5 parts of Emp.

SUPPOSITORIA HYD.: Mercurial Suppositories, for administering Hg per anum. 2 parts *Ung. Hyd.* (= 1 part Hg) in 6 parts of Supp. A 15-grain suppository contains 5 grs. of *Ung. Hyd.*, or nearly 2 $\frac{1}{2}$ grs. of Hg .

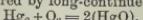
The Mercurial Compounds may be conveniently grouped in "pairs," as the two chlorides, iodides, oxides, etc., each compound being respectively mercuric or mercurous, as the proportion of its combining constituent is greater or less than Hg .

Every mercurial compound is, or should be, entirely volatile by heat.

The non-official Mercurous Oxide ($Hg_2O=416$), *Hyd. Ox. Cinereum*, *Hyd. Ox. Nigrum*, the Black, Sub-, Proto-, *Din.*, or Grey Oxide, is obtained by precipitation, as in

Lotio Hyd. Nig. (q. v.) Easily decomposed by heat—
 $Hg_2O = Hg + HgO$.

HYD. OXIDUM RUBRUM ($Hg_2O = 216$): the Red, Proto-Bin-, Per-, Nitroco-, or Mon-Oxide; Red Precipitate; Mercuric Oxide. Prepared by long-continued heat,

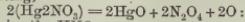


or by precipitation,



or by officinal method, first forming mercuric nitrate,
 $3Hg + S(HNO_3) = 3(Hg_2NO_3) + 4H_2O + N_2O_2$;

then, by heating,



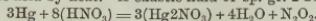
or to economise the HNO_3 ,



"Should not yield fumes of N_2O_4 when heated."

UNGUENTUM HYD. OX. RUB.: Ointment of Mercuric Oxide, Red Precipitate Ointment. 62 grs. to 1 oz., or about 1 part in 8. Keeps its colour well if made "B. P." If lard, olive oil, etc., be used, a decomposition will ensue.

Liquor Hyd. Ntr. Acrid.: Solution of Mercuric Nitrate in nitric acid by heat. A caustic fluid of sp. gr. 2.246;



UNGUENTUM HYD. NTR.: Citrine or Golden Ointment; Mercuric Nitrate Ointment. 1 part of Hg in about 15. Inattention to the strength of the HNO_3 and the heat required will spoil the ointment. Heat to nearly 200° Fahr. Use a vessel of eight capacities; an extra quantity (found by "rule of three") of HNO_3 if too weak. Stir till all N_2O_4 has escaped, and an excellent result is obtained.

Hyd. IODIDUM VIREDE (HgI_2 or $HgI = 327$): Mercurous or Green Iodide, Sub- or Proto-Iodide. A "Quaker-green" coloured insoluble powder, yellowish when fresh. Sp. gr. 7.750. Prepared by adding a solution of KI to a neutral solution of the mercurous nitrate; or by titration (B. P.), $Hg_2 + I_2 = 2HgI$. The S. V. R. is added to carry off the generated latent heat.

Hyd. IODIDUM RUBRUM ($HgI_2 = 454$): Mercuric Red Iodide, Deuto-, Bin-, or Per-Iodide of Mercury. Dimorphous powder, temporary; changed by heat from scarlet to yellow. Prepared by triturating 1 combining portion of $Hg + 2$ combining portions of I; or by precipitation (B. P.), $HgCl_2 + 2KI = HgI_2 + 2KCl$. Is totally soluble in ether. Donovan's and Southean's solutions are solutions of mercuric and arsenic iodides.

UNGUENTUM HYD. IOD. RUBE.: Red or Mercuric Iodide Ointment. 16 grs. of HgI_2 to 1 oz. of Ung., or 1 part in 28, nearly.

HYD. SULPHAS. ($HgSO_4 = 296$): Sulphate or Per-Sulphate of Mercury; Mercuric Sulphate. Prep.: $Hg + 2H_2S = HgSO_4 + 2H_2O + SO_2$ escaping. Insoluble, but when added to H_2O is decomposed— $3HgSO_4 + 2H_2O = 2Hg_2SO_4 + Hg_2O_2 + SO_2$. The hydric sulphate dissolves; the precipitating oxysulphate is the Hyd. Sulph. Flav., or "Turpeth Mineral" of the late P. B.

HYD. SUBCHLORIDUM (Hg_2Cl_2) or $HgCl = 235.5$: Mercurous Chloride; Sub-, Proto- or Di-Chloride; Mercurius Dulcis; Horn Mercury (native). Prep.: $Hg_2O + 2HCl = 2HgCl + H_2O$; or by precipitation, $HgNO_3 + HCl = HgCl + HNO_3$; or, by sublimation, $HgCl_2 + Hg = 2HgCl$; also, as per B. P., $HgSO_4 + Hg = Hg_2SO_4$; this, with $2NaCl = 2HgCl$ (sublimed), $+ Na_2SO_4$ (left).

Lotion Hyd. Nigra. Black Wash. 3 grs. $HgCl$ to 1 fl. oz. Decomposition, $2HgCl + Ca_2H_2O = Hg_2O + CaCl_2 + H_2O$.

PIL. HYD. SUBCHLOR. CO.: Dr. Plummer's Alterative Pill; Pil. Hyd. Submuri. Co.; Pil. Cal. Co. 5 grs. contain 1 gr. of Hg. The P. L. 1-30th weaker.

UNG. HYD. SUBCHLOR.: Calomel Ointment. 80 grs. to 1 oz. = 2 parts in 13, nearly.

HYD. PERCHLOR. ($HgCl_2 = 271$): Per-, Bi- or Mercuric Chloride; Hydrochlorate, Muriate or Oxymuriate; Corrosive Sublimate. Soluble in H_2O , at 60° Fahr. 1 part in 16; at 212° Fahr. 1 in 3; in cold C_2H_2O , 1 in 7; and very freely in C_6H_6O , on which account the latter is much used as its solvent in toxicological operations. Prep.: By simple combination, by heating Hg in an excess of Cl, or by dissolving by heat HgO in HCl; also by sublimation, $HgSO_4 + 2NaCl = HgCl_2 + Na_2SO_4$. The MnO₂ is to liberate Cl from the NaCl, and so avoid Hg_2Cl_2 .

Liquor Hyd. PERCHLOR.: Solution of Mercuric Chloride, same strength as P. L. Liq. Hyd. Bichlor = $\frac{1}{2}$ gr. in 1 fl. oz.

LOTIO. HYD. FLAVA.: "Yellow wash," Aqua Phagedena. 18 grs. $HgCl_2$ to 10 fl. oz. of Liq. Calcis. Decomposition: $HgCl_2 + Ca_2H_2O = HgO + CaCl_2 + H_2O$.

HYD. AMMONIATUM ($(NH_4)_2Hg$). Cl = 251.5; Ammoniated Mercury; Ammonio-, Chloro-Amidite, or Amido-Chloride of Mercury; Hyd. Praecip. Alb.; Mercurio Ammonium Chloride. Insoluble in either H_2O , C_2H_2O or C_6H_6O . Prep.: $HgCl_2 + 2(NH_4)NO_3 = (NH_4Hg)Cl + NH_4Cl + 2H_2O$.

UNG. HYD. AMMON.: White Precipitate Ointment. 62 grs. to 1 oz. = 1 part in about 8. 16, Gallowtree-gate, Leicester.

JOSEPH YOUNG.

II.

The compounds of mercury mentioned in the Pharmacopœia, and used in medicine, are all derived from the metal.

They may be divided into two classes, viz.:-

1. The definite chemical compounds.

2. Preparations in which the metal is only in a state of minute division.

1. Definite Chemical Compounds.

As mercury combines with other elements and radicals in two proportions, its definite compounds may be arranged under two heads, viz.:-

Mercuric Compounds, which contain two combining weights of complementary radical to one of mercury, as $HgCl_2$.

Mercurous Compounds, which contain the metal and radical in the proportion of their combining weights, as $HgCl$, or Hg_2Cl_2 . The following are the official chemical compounds:-

MERCURIC OR GREEN IODIDE, HgI_2 , obtained by rubbing together mercury and iodine (previously weighed in atomic proportions) with a small quantity of spirit, till the whole assumes a green colour. It slowly decomposes by light into HgI_2 and Hg .

MERCURIC OR RED IODIDE, HgI_2 , is prepared by mixing solutions of $HgCl_2$ and KI, and washing and drying the resulting precipitate. It is entirely volatilised by a heat under redness. Preparation.—Ung. Hydrarg. Iodid. Rub., containing 16 grains in 453.5 grains (about 1 part in 28).

MERCURIC OR BLACK OXIDE, Hg_2O , formed in Lotio. Hydrarg. Nigr. by adding mercurous chloride to aq. Calcis (3j. to Oj.).

MERCURIC OR RED OXIDE, HgO , obtained by mixing mercuronitrate with as much mercury as it already contains, and heating the mixture. Preparation.—Ung. Hyd. Oxid. Rub., 62 grains in 499.5 grains (about 1 part in 8). This ointment undergoes decomposition by keeping, the colour changing from red to grey in consequence of the further oxidation of the oxide of mercury.

MERCURIC CHLORIDE OR SUB-CHLORIDE, $HgCl$. Mix mercurous sulphate, Hg_2SO_4 , with chloride of sodium and sublime; mercurous chloride results, which must be washed with aq. Dest., to dissolve out any $HgCl_2$ which may have formed, till the washings cease to be affected with $(NH_4)_2S$. Preparations.—Calomel is contained in Pil. Hyd. Subchlor. Co. 1 in 5, and in Ung. Hyd. Subchlor. 1 in 6*b* nearly.

MERCURIC CHLORIDE OR PERCHLOREDE, $HgCl$. Mercuric sulphate is mixed with NaCl, and a little oxide of manganese, the vapours from which sublime in heavy colourless crystals. The oxide of manganese arrests the formation of calomel in the process, by eliminating chlorine, which converts any calomel into corrosive sublimate. Preparations.—Hyd. Perchlor. and Ammon. Chlor., of each 10 grs., in Aqua, Oj., give Liq. Hyd. Perchlor.; and 18 grs. of Hyd. Perchlor. added to 10 oz. aq. Calcis gives Lotio. Hyd. Flav., the precipitate being yellow mercuric oxide. The difference in colour is accounted for by its being more finely divided than the ordinary red oxide.

MERCURIC NITRATE, $Hg(NO_3)_2$. This salt is formed in two official preparations. The Pharmacopœia, in making Liq. Hyd. Nit. Acid. directs 4 oz. mercury to be dissolved in 5 oz. nitric acid without the aid of heat. The mixture is then to be gently boiled. In the process for Ung. Hyd. Nitrat., 12 oz. nitric acid are used to the same amount of mercury, and a gentle heat applied.

MERCURIC SULPHATE is prepared by heating mercury with Acid. Sulph. till the metal disappears, and continuing the heat till a dry white salt remains, sulphurous acid gas being evolved.

[September 15, 1869.]

HYDRARG. AMMONIATUM is formed when solution of ammonia is added to a solution of a mercuric salt, perchloride being ordered in the Pharmacopœia. The pp. is considered to be chloride of ammonium, NH_4Cl , in which two atoms of hydrogen are replaced by one of mercury. In analysis this reaction is a delicate test for the presence of a mercuric salt. Preparation.—Ung. Hyd. Ammon., containing 62 grs. in 1 oz.

2. Preparations which contain the metal in a minute state of division.

HYDRARG. C. CRET, composed of mercury one part, prepared chalk two parts, rubbed together till globules are no longer visible to the naked eye.

PIL. HYDRARG., contains one part of mercury in three.

UNG. HYDROCARB., containing one part mercury in two parts, in which process the metal is rubbed with prepared lard and sue, till globules are no longer visible. If properly prepared, it gives no traces of globules when rubbed on paper and examined with a microscope of four powers.

UNG. HYD. Co. contains camphor with mercurial ointment, yellow wax, and olive oil. One part mercury in 4*l.*

EMPLAST. HYDRARG. contains 1 part in 3.

EMPLAST. AMMONIACI C. HYDRARG. The presence of the small quantity of sulphur greatly facilitates the division of the mercury, probably by the formation of a little sulphide of mercury.

LINIMENT. HYD. contains equal parts Ung. Hydrarg., Lin. Camph., and Solution of Ammonia.

SUPPOST. HYDRARG. contains one part of the ointment in three, and is made the proper consistence by the aid of white wax and oil of theobroma.

white wax and oil of the
Totton, Southampton.

ASHBY B. FLETCHER



COLONIAL BUILDINGS.

IN our record of novelties this month we have very much pleasure in chronicling the realisation of a new and excellent idea, and one which, we are satisfied, will prove of eminent service to the commercial world, including among others

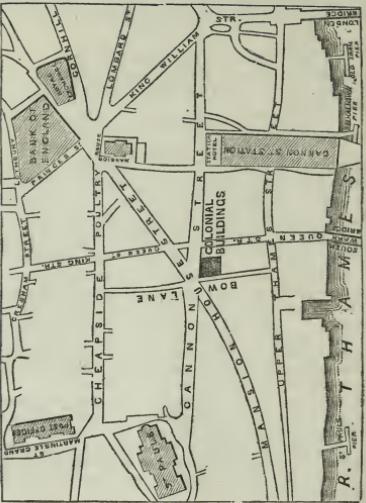


COLONIAL BUILDINGS.

a large number of our subscribers, more especially those residing in the provinces and abroad.

The handsome building represented at the head of this article, known as Colonial Buildings, is situated, as will be seen by a reference to the annexed plan, in the middle of Cannon-street, and exactly at the point where this thorough-

Ware is intersected by the important new road called Mansion-house-street, leading direct from the Thames Embankment to the heart of the city. The upper portion of this



PLAN SHOWING SITUATION OF COLONIAL BUILDINGS.

spacious block is now being fitted up for the reception of samples of all kinds of manufactures, merchandise, and conventions, more particularly such as are suitable for the export trade. Thus, when these are ready, the buyer, large or small, will find a bazaar awaiting him, where, with the greatest economy of time and trouble, he will meet with a microcosm of trade, and the merchant will always have close at hand handsome show-rooms of English and Continental goods to which he can conduct his customers; and London merchants, as well as their visitors, will not be slow to appreciate the mutual advantages thus offered. We have reason to know how highly American and other foreign firms whose principals or representatives visit London periodically in search of something new will value such an opportunity as this. The terms offered to those who wish to take advantage of this means of exhibition are so liberal, that the managers of this enterprise will certainly be able to select exhibitors among first-class firms only, and thus secure a high character and prestige for the whole collection. We have designated these sample-rooms in anticipation as a bazaar, but the whole plan is so novel, at least in England, that we fear this name will be likely to convey a wrong impression. The rooms are intended for real use, and not merely for commercial *dilettanti*. The system is so artistically arranged for the mutual benefit of both buyers and

for the initial success of their objects and sellers that it cannot fail to prove an ultimate success. The former will find it both interesting and serviceable to visit these rooms, the latter will have for all practical purposes, and at a ridiculously cheap rental, a position in the very best part of London, and with a connection already assured. Besides the central position, there is another advantage in

the fact that in Colonial Buildings are the publishing offices of the *European Mail*, the *British Trade Journal*, the *Ironmonger*, and the *CHEMIST AND DRUGGIST*, as well as the offices of Messrs. Morgan Brothers. To one or other of these departments there is, therefore, a constant stream of representatives of foreign and British commerce. We refer to the advertisement appearing on another page for fuller details of this plan. The annexed chart will, we trust, be of service to our subscribers and others who may not be well acquainted with London, and who may wish to find us. We are always glad when we can be of service or render any information to our friends on matters connected with the trade which we represent.

BALMODERMA.

UNDER this title Messrs. Lloyd Brothers have introduced a very serviceable toilet requisite, which combines in itself the uses of cold cream, tooth paste, and shaving cream. For all purposes here indicated, Balmoderma is remarkably efficient, and is moreover extremely pleasant to use. It is put up in an attractive form and sold at a very moderate price, and is, we think, deserving of a position on every chemist's counter.

HIBBERT'S ANTISEPTIC.

THE prevalence of a somewhat widely-spread distrust of vaccination, whether founded in reason or not it is out of our province to determine, leads us to call the attention of the trade to the testimonials now being published in our advertising pages respecting the efficacy of the above medicine for this disease. Mr. Hibbert, we believe, accepts the theory that fermentation is the primary origin of this and of many, if not of all, other complaints, external and internal; and the antiseptic we now refer to is, we are informed, of the same nature as the chemicals employed to prevent mildew in calico. Mr. Hibbert has devoted himself to the prosecution of experiments with a rare enthusiasm, and with a remarkable success, and his medicines have acquired a considerable reputation in the city and neighbourhood of Manchester.

TAPIOCA BOUILLON.

WE have in this preparation, the latest development of Extract of Meat. It is a combination of this preparation with Tapioca, forming, if we may so describe it, meat and puddings in one course. It is highly nutritious, and very palatable. The manufacturers are Messrs. Geyelin and Co. of Argyle-square, London, and Caen, France.



LAW AND POLICE.

"COOPER'S SHEEP-DIPPING POWDER."

At the Church Stretton Petty Sessions, on the 24th ult., Mr. William Lester appeared, in answer to summonses taken out by Mr. James Phillips, chemist, of Church Stretton, charging him with contravening the Arsenic Act, 1851, by selling "Cooper's Sheep-dipping Powder" without being properly coloured, without registration, and to a person under the full age. The case had been heard on the 3rd ult., as reported in our last issue, but adjourned in order

to give the proprietor an opportunity of proving his right of sale in the article. A full bench of magistrates had assembled, the case having excited a great deal of interest. There were present Messrs. M. G. Benson, C. O. Pemberton, Rev. H. O. Wilson, and Rev. R. G. Benson. Mr. Walker now appeared for the defence, and contended that the sale of sulphide of arsenic, being a coloured preparation of arsenic, did not come within the meaning of the Act. On behalf of the complainant, it was contended that "sulphide of arsenic" being composed of sulphur and arsenious acid, was therefore brought within the meaning of the Act. The Arsenic Act in its provisions set forth in the 3rd section that no person shall sell any arsenic unless the same be before the sale coloured with soot or indigo in certain proportions. In the 6th section of the same Act, it sets forth that in the construction of the Act the word "arsenic" shall include arsenious acid and the arsenites, arsenic acid and the arseniates, and all other colourless preparations of arsenic. The penalty for offending against the Act is set forth in the 4th section as not to exceed £20. It was held by the complainant that the article being an arsenite, or a compound of arsenious acid with sulphur, brought it clearly within the meaning of the Act; and it was urged that as the preamble of the bill set forth that the unrestricted sale of arsenic facilitated the commission of crime, all such preparations mentioned in the 6th section were intended to be included, and Cooper's dipping powder was one of them. Poisoners would only have to purchase a packet of this article, and would obtain, without any inquiry being made, sufficient arsenic to poison a whole parish. One of the justices wished to know whether, if he wanted Scheele's green to paint his gig, he could only purchase it coloured with soot; and, in reply, he was informed that he could purchase 10 lbs. under the 3rd section without such admixture, and parties who used it in their trade for such purposes could purchase it in that quantity. The complainant asked the bench to convict the defendant on the grounds stated. Mr. Cooper, who was present, produced two packets, containing one ounce each, the one arsenite of copper and the other sulphide of arsenic, both of which he stated he had purchased in London the day before without a question being asked, and no register whatever made. Mr. Cooper then read the following letters, which had been written by the complainant, Mr. James Phillips, and the contents created great sensation:—

"Church Stretton, June 18th, 1869.

"Mr. Cooper.—Sir,—Please quote prices of Sheep Dipping Powder. I have already had eight dozen this spring through my wholesale druggist, and shall be able to do a good trade in it this season, as I have decided to give up making my own composition and selling yours to my customers instead. I do not consider you acted kindly towards me, appointing a neighbouring grocer to sell your preparation, inasmuch as I have always sold yours to those parties who preferred it, and have circumscribed your bills when you have supplied them. Your representative merely called on me, and, in a very strange manner, asked if I sold "Cooper's Dipping Powder," and upon replying that I had not any in stock, but made a dipping of my own, he turned on his heels and arranged with Lester to sell it. Now, had he told me he was your representative, and offered me terms, I would rather have accepted them and relinquished my own, for many reasons; as it is, I am determined he shall not have the sale. None of my customers will have the goods of him, and, so far as his *bona fide* trade in the article is concerned, where he sells one packet I can sell dozens. I suppose you are aware that I have given him notice as to the selling of the poisonous compound, and have threatened to proceed against him, and am told that you have offered to indemnify him. Will you supply me with the article, and find me with hand-bills and posters? If so, I will do the trade well, and give up my own composition; but if you decline to do this, I shall make other arrangements, and do the trade in a less satisfactory manner to all parties. Let me hear from you on the subject, and if you can supply me on advantageous terms alike with Lester, I will at once write you further and arrange accordingly. The trade I am determined to do.

"I am, Sir, your obedient servant,
"JAMES PHILLIPS."

"Church Stretton, June 25th, 1869.

"Mr. Cooper.—Sir—I am in receipt of yours of yesterday. In reply, I have to inform you that I was not asked by your representative, if such he was, to sell your preparation, otherwise I should have done so. I think it fit, however, that you should be made aware of the fact that last year Lester sold your dipping at 1s. 2d. per packet, and thus influenced a lot of people to buy it of him who were customers of mine for it. You will find that his sales will be something smaller this year, and, as you decline supplying me with it, I am determined to spoil his trade in it, and rather than be beaten by such a niggardly fellow as he is, I will sell it at cost price. I have seen my customers, many of whom have their names attached to your list of testimonials, and I have told them that I shall supply them with the article at a lower price than Lester offers it. Relative to the Pharmacy Act you quote, I have not overstepped its limits, and I am only waiting counsel's opinion as to whether the sale of arsenic can be made by him in conformity with the provisions of the Arsenic Act. I think not. So far as you are concerned as proprietor, I am sorry to bring the matter forward, my motive being to protect my own trading interest. Lester is one of those selfish, unscrupulous men who attempts to injure the trade of everyone in the place by underselling and departing from the recognised prices of articles. If a penny is got as profit on any one article, he will be satisfied with a halfpenny. On these grounds, and these only, I have made up my mind that the sale of this commodity at all events shall not procure for him what he most desires, even the smallest profit. The trade in it shall be spoilt, and once so, will be neither good to him nor anybody else.

"I am, Sir, yours obediently,
"JAMES PHILLIPS."

Mr. Walker, on behalf of defendant, said that from the character and tone of the letters read, he feared that the object of the prosecution was scarcely to be regarded as one of public policy or for the public good. Having referred to the Act of Parliament, he contended that arsenic simple, and not an article containing a preparation of arsenic, was alone contemplated by the Act; that section 3 specially applies to the colouring of the arsenic, and that white arsenic was meant, and not a preparation already coloured. The bench, having consulted, decided upon dismissing the summonses, they being of opinion that the coloured preparations of arsenic were not within the meaning of the Act. Costs of the summonses to be paid by the complainant, and the costs of the adjournment to be paid by Mr. Cooper, who defended the case for his agent.

CHARGES UNDER THE PETROLEUM ACT.

At the Longton Petty Sessions, on the 18th inst., Mr. John Morris, chemist, Market-street, was summoned for keeping petroleum without a license. Mr. Morris admitted the fact, and stated that he had applied to the Town Clerk for a license, but as he could not get one, he had not bought or sold any petroleum since. He stated that at Dresden (a place in close proximity to Longton), a tradesman had obtained a license, and thus, by the Town Council of Longton not granting any, a monopoly was created. Mr. Davis (one of the magistrates) agreed with Mr. Morris, that there ought to be uniformity in the matter, and that Dresden, though actually not in the municipal borough, appeared so connected that it might be taken as part of the town. Mr. Bridgwood (another magistrate) said the safety and lives of the inhabitants were held in greater respect than the profits of the few connected with the trade. They all admitted the principles of free trade, but under all the circumstances the Town Council had considered it desirable that no petroleum licenses should be granted. They would inflict a nominal fine of 1s. and 12s. costs.

At the same sitting of magistrates, Mr. Thomas Turner, chemist, Stafford-street, Longton, was summoned for keeping petroleum without a license. The defendant considered it was an erroneous notion of the Town Council, as a body, in not granting licenses; there was not so much danger from benzoline as from turpentine. Mr. Davis said the magistrates had to administer the law as they found it; they would, however, only impose a nominal penalty of 1s. and costs.

At the Tunstall Petty Sessions, on the 2nd inst., Mr. Samuel Bennett, chemist, High-street Tunstall, was charged before Messrs. J. E. Davis and E. Wedgewood, the presiding magistrates, with having petroleum stored on his premises without a license, and with having a case of benzoline without the proper label as to bringing a light in close proximity with it. It appeared that Mr. Bennett had applied for, and obtained a license from the Local Board of Health on the 11th of August. The clerk explained to the bench that on the day of the monthly meeting, an application was received from Mr. Bennett, an inspection made by the committee, and a license granted, but it did not seem that the license was delivered before the inspector's visit. Captain Knight (the inspector) said he was not aware of that fact. The summons was dismissed, and on the application of Mr. Bennett, the seized article was ordered to be restored.

At the Burslem Petty Sessions, on the 31st ult., Mr. George Christopher Guest, chemist, Queen-street, was summoned for having, on the 7th of August, kept nine gallons two quarts of petroleum, and one gallon seven pints of benzoline without a license. Mr. Guest said he had applied for a license before the inspection was made, and received an assurance from the clerk that he would be safe if the inspector called. Mr. Lowndes (the clerk) repudiated this. Defendant was fined 1s. and costs.

CONVICTION OF A CHEMIST FOR DISPENSING POISON WITHOUT A POISON LABEL.

On the 25th ult., the magistrates of Worthing imposed a fine on Mr. Berry, a druggist, for having unlawfully sold prussic acid to a stranger in a bottle not labelled poison.

It appears that a young man named Ansel Johnson, who was assistant to Mr. Crotch, chemist, of Edgware-road, London, having been left in charge of the business while his employer was absent in the country, went away, taking all the money he could get, at the same time sending a telegram to Mr. Crotch to return immediately. He was next heard of at Worthing, where he obtained some hydrocyanic acid, with which he was accused of attempting to commit suicide. This hydrocyanic acid was supplied to him by a druggist at Worthing, and hence two charges were laid before the magistrates—one against the young man for attempting to commit suicide, which, however, was not perpetrated, for the poison was not taken, and the other against the druggist at Worthing for selling the poison, as was supposed, in violation of the provisions of the Pharmacy Act.

We extract from the *Pharmaceutical Journal* some additional particulars, together with the just comments of the editor:—

"On Wednesday, the 11th of August, a young man of respectable appearance went in a fly to the shop of a druggist in Worthing, where he was not known, and presented a prescription, of which the following is a copy, to be dispensed:—

B. Acid. Hydrocyan. "Scheele's," 3*ij*.
Aq. Rose, 3*ij*.

M. ft. Lotio, ter die applicand.

R. M. L.

Mrs. Newton.

"The medicine was prepared according to the prescription, in an angular bottle, to which a coloured label, with the words "CAUTION—FOR EXTERNAL USE," and the name and address of the druggist, was attached; and the prescription was copied in a book kept for that purpose. Mr. Berry, the druggist, had thus fulfilled all that the Act of Parliament requires in dispensing medicines, according to the interpretation hitherto put upon the wording of the 17th section of the Act. It is there stated as follows:—"Nor shall any of the provisions of this section apply to any medicine supplied by a legally qualified apothecary to his patient, nor apply to any article when forming part of the ingredients of any medicine dispensed by a person registered under this Act, provided such medicine be labelled in the manner aforesaid with the name and address of the seller, and the ingredients thereof be entered, with the name of the person to whom it is sold or delivered, in a book to be kept by the seller for that purpose." If there could be any doubt here as to the meaning of the words 'labelled in the manner aforesaid,' that has since been removed by the 'Pharmacy Amendment Act,'

which, by a singular coincidence, received the royal assent on the very day the above transaction occurred.

"We think the magistrates are clearly wrong in the decision they have come to, and as the case is one of very great importance to every chemist and druggist throughout the country, and to the medical profession, we hope that no time will be lost in appealing to a higher tribunal, and that any assistance that may be required will be afforded to Mr. Berry in asserting and supporting the rights of himself and his brethren.

"It was never contemplated, and, indeed, it would be highly objectionable, that medicines dispensed from prescriptions, whenever they contain as an ingredient one of the articles included in the schedule of poisons, should be subjected to all the regulations relating to the sale of poisons. The part of section 17 which we have quoted, was intended to obviate such a result, and the Amendment Act renders it more clear than does the Act itself what the intention of the Legislature was in this respect."

LIABILITY OF CARRIERS.—WARREN v. THE GREAT WESTERN RAILWAY COMPANY.

A case of some interest to chemists has been tried at Bristol before Mr. Justice Lush. The plaintiffs were Messrs. A. and J. Warren, wholesale druggists of that city, and the action was brought to recover compensation from the railway company for not properly carrying a certain carboy of essence of lemon. It was proved that the carboy was securely packed with straw in a box when delivered to the company. On its arrival, the neck of the carboy was found to be depressed, as from a violent blow, and the essence, 120 lbs., with the exception of about 7 lbs. or 8 lbs., had been lost. The defence was, that the carboy was improperly packed, but this was not sustained; and ultimately the jury found for the plaintiffs, damages £44.

GOSSIP.

Mr. Gill, druggist, Scotland-street, Sheffield, purchased, on the 1st inst., a desirable property in Pea Croft, for £1,400.

Professor Atfield has been unanimously elected an honorary member of the Chicago College of Pharmacy.

Messrs. Arnold and Sons, surgical instrument makers, of 35 and 36, West Smithfield, have purchased the business for many years carried on by Mrs. Brendam (formerly Long), 217, High Holborn.

A person has been lately poisoned in Baltimore, Maryland, through the carelessness of a druggist, who put up a prescription with aqua ammonia instead of aqua cinnamomi, as ordered in the physician's prescription.

Mr. Mann, late of Stockbridge, has disposed of his retail business in that town to Mr. S. J. Hicks, and removed his manufactory of castor oil pills to larger premises in the London district, New Hampton, S.W.

Mr. E. H. Lincker, of Bradford, has suggested the formation of a Medical Provident Aid Institution in that town, to enable the working classes to obtain medical attendance and medicine in sickness.

The employees of Mr. and Mrs. Hickisson (the latter better known as the daughter of the late John Bond) were entertained on the 23rd ult., at the sole cost of their employers. The occasion was noticeable from the circumstance that the workpeople presented Mr. Hickisson with a diamond ring, and also that that gentleman announced his intention to give a second entertainment, which will take place on the 5th October, when Mr. Hickisson will present a silver cup to be rowed for.

A young man named William Parker, aged 24, a chemist's assistant, of Sittingbourne, has been drowned while bathing from the machines on Sheerness beach. The deceased was scarcely out of his depth at the time he was heard calling for help, and it was alleged that the attendants employed by the bathing company lost time in launching a boat instead of at once going to his assistance. An inquest was held on the body by Mr. T. Hill, when the jury returned a verdict of "Accidental death," and suggested that the company should employ younger men, who could swim, to attend to the machines.

Messrs. Pitt and Co. gave their annual treat on Saturday last, to fifty hands in their employ. The party left the works, Wharf-road, City-road, at nine o'clock, in four pair-horse vans. After a pleasant journey they drew up at the Robin Hood Hotel, Loughton. Shortly afterwards the company sat down to a good dinner. On the removal of the cloth the usual loyal toasts were given, and with real English loyalty responded to. The "Health and Prosperity of the Firm" followed, and having been duly honoured, was supplemented by hearty cheers. The company afterwards betook themselves to a variety of out-door pastimes. At an early hour in the evening the whole party mustered and partook of tea, and subsequently left for the works, which they reached about eleven o'clock.

The will of Alexander William Rowland, of Hatton-garden, wholesale perfumer, proprietor of Rowland's Macassar Oil, Kalydor, and Odonto, was proved in London, under £35,000 personally. The testator died at his residence, Champion-hill, Lower Sydenham, on 28th June last, aged 61. He executed his will in 1867, and a codicil 1868. The executors are Charles Bentley Bingley, 185, Regent-street, and John E. Bennett, of Brunswick-square, Brighton. The testator was in partnership with his brother, John Henry Rowland; his son, Henry Edward Rowland; and his nephew, John Alexander Rowland, under deed of 1866. He directs that his share in the business of manufacturing perfumer shall be purchased by the surviving partners upon terms stated by him. He has divided his property amongst his sons and daughters in nearly equal shares, excluding therefrom his son Henry Edward, he being provided for under the partnership. There are annuities to be paid to his (testator's) two sisters, out of his freeholds in St. Bride's churchyard, Barbican, and Greenwich. By his codicil, dated January 25th, 1868, he speaks of the diminished state of his capital, attributed indirectly through the late panic, and from other causes.

MARRIAGES.—At St. Helier's, Mr. W. A. Tilden, B.Sc. Lond., to Charlotte P. daughter of Mr. R. Bush, of Jersey, Aug. 18.—At St. Thomas's, Edinburgh, William Webb, Esq., manager, Apothecaries' Hall, Dublin, to Annie, fourth surviving daughter of the late Robert Reed, Esq., Edinburgh, and relief of Samuel McMorrain, Esq., of Liverpool.—At the parish church, Madron, Cornwall, by the Rev. Jevon Perry, Mr. R. Teague Worth, chemist, of St. Ives, to Mary Ann, eldest daughter of Mr. William Ellis, formerly of St. Burian, August 22.

CONTRACTS.

TOWNSHIP OF TOXTETH PARK.—Oatmeal, flour, peas, for six months, September 22; and milk, butter, and fresh butter for twelve months, September 22.

WEST DERBY UNION.—Oatmeal, peas, Indian meal, groceries, cheese, fresh butter, soap, starch, brushes, soda, salt butter, bacon, etc., for six months, for the workhouse at Walton-on-the-Hill. For the out-door poor, groceries and general provisions, September 20th.

The Guardians of the West Derby Union are open to receive tenders on the 20th inst. for the supply of soda water and lemonade to the workhouses at Walton-on-the-Hill for six months.

The Directors of the South Eastern Railway are prepared to receive tenders for the supply of varnish, paint, dry salteries, etc., for three months.

LEEDS UNION.—The tender of Messrs. Harvey and Reynolds has been accepted for the supply of drugs for three months.

Trade Memoranda.

A TEMPEST IN A TEAPOT.

A CERTAIN section of our fellow-creatures, and a section comprehending a large number of very respectable tradesmen, is at this moment in a state of agitation on the subject of Packet Tea. If the reader should be fortunate enough to number among his acquaintance any gentlemen of the grocery persuasion, we would strongly advise him, in his communications with such, to be particularly careful to

[September 15, 1869.]

avoid any reference to the momentous question of Packet Tea. A few months ago we very innocently propagated a firebrand in this column, by inserting a paragraph alluding to the abolition of the tea licence, and the consequent benefit which would accrue, especially to the wholesale vendor of Packet Tea. This paragraph grieved our excellent contemporary the *Grocer*, in which journal appeared an editorial lecture on the iniquity of any but grocers becoming tea-dealers, and gently but firmly reprimanding us for our apparent sympathy with the offenders. Fortunately, however, our defence was undertaken by the *Publican*, who vigorously vindicated our position, and at the same time incidentally justified the licensed victuallers, who were of course implicated in the same crime as the druggist. The grocers and their literary representative have waxed warm on the subject, and a sort of informal resolution has been come to, that every wholesale tea-dealer who shall be found guilty of supplying Packet Teas to chemists, confectioners, or licensed victuallers, shall be forthwith sent to a commercial Coventry, until they shall renounce all connection with "the accursed three." If we remember rightly, the Atlantic Ocean continued to flow, notwithstanding the energetic efforts of Mrs. Partington; and we really cannot see how the streams of Packet Tea to the public is to be prevented in future, by merely damming up a portion of the channel. English grocers should appeal to Cesar, who in this instance happens to be the Emperor of China. A petition should be drawn up in the customary Chinese for that gentleman's perusal, and it would doubtless produce as satisfactory result in that quarter, as a similar document addressed to our own Legislature.

THE "TIMES" AND THE STANDARD MEASURE.

Without accusing the *Times* of plagiarism, we may point out that in a leading article which appeared in that journal on August 30th, we were very pleased to notice a most able advocacy of certain opinions we have ourselves recently expressed, on the absurd anomalies which still linger in the wine trade, in the use of a "reputed," that is, an utterly indefinite measure, in place of the standard as defined by law. The article is reproduced in our advertisement pages by the Standard Measure Wine Company, who in their system of business have anticipated the criticism of the *Times*, and it will well repay perusal.

Messrs. Newbery and Sons have issued a new trade list of patent medicines and proprietary articles.

Homeopaths assert that the *Thuja Occidentalis* (*Arbor Vitæ*) is a prophylactic (preventive) medicine for small-pox, having the same effect on the constitution as vaccination, only in a more manageable manner. Allopathic doctors, of course, regard such an assertion with contempt, although as vaccination itself is purely homeopathic in its principle, the idea might be thought worth a few experiments. Doubtless there is some medicine yielded by the vegetable world, by which such a result might be accomplished, and there is a fame surpassing Jenner's for him who shall establish the discovery thereof. The prosecution of such investigations as are here indicated would render the medical profession more deserving of the eulogiums which it has lately received as a science, than outsiders are disposed to accord to it.

GAZETTE.

BANKRUPTS.

BUDGETT, A. E. S., 4, Clement's-inn, medical assistant.
CREARN, M. J., Stoke-upon-Trent, doctor of medicine.
GRAVES, JOSEPH, Huddersfield, medicine vendor.
HEADLAND, ALFRED, Brighton, chemist.
HORSFORD, S. STRATFORD, Essex, surgeon.
JOHN, J., Newark, Nottinghamshire, surgeon.
LEWIS, EDWIN ALBRIGHT, South Molton-street, London, surgeon's assistant.
PATTISON, J., South Lodge, Hendon, medical practitioner.
SPECKLEY, GEORGE, Newark-upon-Trent, chemist.
THOMPSON, ANDREW, Hailey, druggist.
WARBURY, CHARLES, late of Hadley-street, Kentish-town, doctor of medicine.

PARTNERSHIPS DISSOLVED.

ALLEN, JOHN TULE, and SAGE, CHARLES JAMES, Frome, Somersetshire, chemists.
MANCHESTER AERATED WATER COMPANY, Newton-heath, Lancashire.
POTTER, J. R., and E. G., Bath-street, City-royal, London, E.C., surgeons.
PRESTON, J. T., A., and S. W., London-wall-street, London, wholesale druggists (so far as regards Stanton William Preston).
ROBERTS & VIVIAN, Uxbridge, surgeons.
WARRICK, W. R., and WHITING, H., Southend, Essex, surgeons.

DECLARATION OF DIVIDEND.

EVANS, W. L., Cardiff, chemist, first dividend of 1s. 4d., any Monday, at Mr. Acraman's, Bristol.

SCOTCH SEQUESTRATION.

MCKAY, JOHN, Portsoy, Banffshire, bachelor of medicine.



* * * Correspondents not replied to in this column will probably find answers to their inquiries in other parts of the journal. We cannot undertake to send replies through the post.

* * * We shall esteem it a favour if subscribers who receive their copies in a green wrapper will kindly remit at once. A receipt will be given for all money paid at the office, but we do not acknowledge the receipt of subscriptions through the post, unless an extra stamp be enclosed for that purpose.

Inquirer.—Pepsine is soluble in water, but is decomposed at a temperature of 120°. Pepsine Wine is very difficult to make, on account of the proneness of the active ingredient to be decomposed by alcohol. We have never seen any Pepsine Wine equal to Messrs. Morson's.

Mr. J. B. Williams (Olney).—(1) Preparations of Copper are not included among the poisons of the Pharmacy Act. (2) See Editorial Notes. (3) Syrus of Poppies ought to be labelled poison, if the Act be strictly interpreted, but such a course is so manifestly absurd, that the Pharmaceutical Society obtained counsel's opinion to the effect that the Act only intended such preparations of Opium and Poppies as were deadly in ordinary quantities. (4) Answered elsewhere.

T. P. Saunders (Bradford-on-Avon).—Richardson's *Mechanical Dentistry* (16s.) and Harris's *Principles and Practice* (about 24s.) are the standard works. Both are American publications, but can be obtained through our publisher.

A Subscriber (Shadwell) will see from the Pharmacy Act Amendment, 1869, which we publish this month, that the words "legally qualified medical practitioner" are now substituted for the word "apothecary."

Macpherson & Co. (Stormontway).—Newbery and Sons, we believe, are agents for the preparation you refer to. At least, we have seen it there.

Spes.—The title of Messrs. Day, Son, and Hewitt's preparation, "Gaseous Fluid," is copyright.

Ebor.—1. The Paris Codex may be obtained through our publishers. We believe it costs about 12s. 6d.—2. The Prussian Pharmacopœia is in Latin.—3. Jahr and Gruner's Homeopathic Pharmacopœia, price 8s., is probably the most useful work.



DISTILLED WATER IN PHARMACY.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

Sir,—I was unfortunately not present at the meeting of the Pharmaceutical Conference at Exeter, during the reading of Mr. Inc's paper on Distillates, or I should have added a word or two on the subject of distilled water. With regard to the odour of freshly distilled water, I have found

that this odour is absent if the still be supplied on the continuous principle from the hot water at the top of the condensing tub, and the portions of distillate be rejected, which come over when the operation is first started; the necessary precaution appearing to be that the water in the still or supplied to it, should be heated for some time before commencing the collection of the product.

The practice of keeping distilled water for a considerable period before using it, as advocated by Mr. Ince, may possibly have the effect of aerating the water, and so rendering it potable; but whether this is necessary or desirable for dispensing purposes is a matter which admits of much doubt. In one instance, certainly, distilled water so kept would be inadmissible, that is, in the preparation of *Liq. Plumbi Subacetatis Dilutus*, in which process a very considerable turbidity would be produced by the use of such distilled water. It may possibly appear somewhat hypercritical to mention the occurrence of this turbidity in making *Liq. Plumbi Subacetatis Dilutus*, inasmuch as the *Pharmacopœia* directs the Liquor to be filtered; but it should be remembered that according to the amount of carbonate of lead removed by filtration, so is the strength of the final product diminished. I am aware that almost every sample of distilled water will produce a turbidity in a solution of Subacetate of lead, and having pointed out the defect it is only fair that I should mention a remedy. Distilled water free from carbonic acid may be obtained either by boiling the distilled water for some time immediately before using it, or by allowing the water in the condensing tub to get very hot, so that the distillate is collected at a temperature of from 80 to 90 degrees centigrade. There is, of course, a considerable waste of steam by this process, but the distillate obtained is quite free from carbonic acid, and may be used to dilute subacetate of lead without causing any turbidity. On a large scale the waste may be avoided by having an intermediate chamber just before the worm, the water which condenses in this being, after the operation has continued for some time, free from carbonic acid, and the steam which passes through can be condensed in the worm, and the resulting distilled wafer used for ordinary purposes. I would not have occupied your space with a matter so apparently trivial, had it not appeared to me that the above remarks were a necessary supplement to Mr. Ince's observations on the subject of distilled water, which I am afraid is not of that interest to chemists and druggists generally which it should be, as I regret to say that I have found it to be the exception rather than the rule for druggists to use distilled water for dispensing purposes.

I am Sir, yours &c.,
HENRY MATTHEWS, F.C.S.

IS THE SALE OF ARSENICAL PREPARATIONS BY UNREGISTERED PERSONS LEGAL?

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR.—This is a question of vast importance to the trade; it is, nevertheless, in a great measure overlooked, owing to the difficulty of solving it; for whilst all can recognise the injustice, no one has hitherto sought to establish it by legal process. The registered chemist has placed over him legal restrictions as to his qualification and mode of conducting his sales, and so long as he obeys the injunctions of the *Pharmacy Act*, so long only can he enjoy, without fear of legal interference, the privileges of his trade; but, if from carelessness or accident, he should disobey the stringent provisions of the Act, and thereby cause, directly or indirectly, injury to the person, he is liable to be hauled before a criminal tribunal, and subjected to fine or imprisonment, and not only is he brought into disgrace in this respect, but, according to the 26th Section of the *Pharmacy Act*, his name may be erased from the Register, and his only hope of obtaining a livelihood taken from him. This is a weighty consideration, but at the same time, a just one, and concerning which we have little cause of complaint, for whilst the educated portion of traders attend to their business and carry it on in a proper manner, the law admits of no interference with their privileges, which it is but proper should be protected.

But there is a great evil admitted and permitted. There are a class of parasitical traders who have no such qualifica-

tion to be found in every town, village, and hamlet, who are feeding upon the resources of the legitimate trader, robbing him of his rights, setting the law at defiance, treating him with contempt, and bringing into disrepute the very name of the trade to which we belong. It behoves us to bestir ourselves in the matter, and to seek the extermination of this class of amenable parasites. They exist in hundreds, and, like the "Acarus Scabiei," increase in number daily, the longer they are allowed to continue their illicit and annoying ravages.

Of whom do we complain but of the petty grocer, the village sundryman, the huckster, and others who are dealing not only in poisons, but in every class of drugs they can obtain sales for, and, having full knowledge that it is an illicit trade, they are guilty of every species of annoyance, and undersell and retail at valueless prices, articles, which they know the qualified trader only has a right to deal in.

In this town lives a grocer who is thus trading, interfering with the business of other traders, and selling poisonous and other drugs at such prices as to admit of little or no profits, but simply to do the illicit trade. On these grounds I, in January last, gave him notice to discontinue, under threat of prosecution, such sales of poisons, and particularly one poisonous compound "Coopers sheep dipping powder." He had been selling this preparation at 1s. per packet, the maker's price being 1s. 4d., and the wholesale agents supplying it to the trade at 1s. per doz. Upon inquiry I was informed that Cooper was supplying him with this preparation at 10s. per doz., carriage paid, and allowing a discount. I mention this to show the manner in which Cooper does his trade. I therefore determined to prosecute the case, and in May last I caused a purchase to be made, and after making a qualitative analysis commenced proceedings under the *Arsenic Act*, 1851, for the recovery of penalties under that Act. The three several offences charged were "selling arsenic without admixture with soot or indigo," "Without having registered the sale" and "to a person under full age." The matter came on for trial "Phillips v. Lester" before the magistrates at Church Stretton on 27th July last. A nephew of the proprietor attended for Lester, his agent, who admitted the sale, but pleaded a right of sale in the article in question. The summons charged him with selling a certain packet of "Cooper's sheep dipping powder" containing upwards of 6 ounces of sulphuret of arsenic and arsenious acid, &c. My analysis of the compound as given in evidence was as follows:—Packet contains 28 ounces, of which 24 ounces was sulphuret or sulphide of arsenic with arsenious acid, the remaining 4 ounces being alkali, (soda) and impurity. Cooper, upon the hearing, admitted the analysis. The case was adjourned to give him opportunity of proving his right of sale in the article, the magistrates intimating that they were satisfied upon the facts as proved.

The adjourned case came on again on August 24th, and a Mr. Walker appeared, with Cooper, to defend.

William Farmer Cooper was examined for the defence, and represented himself as being a chemist of repute, having won great honours and medals for his analytical and general knowledge of chemistry. On reference to the register of chemists, his name is, however, absent. He admitted the article to be nothing more nor less than sulphide of arsenic, and stated that it was made by mixing arsenious acid or white arsenic with sulphur in a certain proportion. He produced two 1oz. packets of Scheels' green (arsenite of copper), and "orpiment" (sulphide of arsenic), which he had bought the day before from a colourman in Fleet-street, without a question being asked or a register made. The 6th section of the act distinctly includes the arsenites and arsenites, as well as arsenious acid, and all other colourless poisonous preparations of arsenic.

I endeavoured to shew that sulphide of arsenic although technically so named, was in reality identical with an arseniate, it being composed of arsenious acid in combination with sulphur. The only argument by which the defendant sought to establish his "right of sale," being that the arsenic act only included the "colourless" poisonous preparations of arsenic.

The magistrates decided that the sulphide of arsenic did not come within the meaning of the act, and on that ground alone dismissed the summons, the costs of adjournment

were ordered to be paid by Mr. Cooper, who said he would rather lose £300, than pay as many shillings, and I objecting to pay them, paid only the other portion of the costs, amounting to 2*s*. The magistrates intimated that they would grant a case on the question if I wished it. Upon consideration, however, that I had nothing more at stake than the majority of traders have, I decided to abandon the chances of appeal, for although willing to do service to the trade generally, I did not feel justified in risking the loss of a large sum, in prosecuting an appeal. For the present I am content to wait until their next monthly meeting, when I purpose taking proceedings under the pharmacy act, which will then decide still further, how far the sale of poisons can be indulged in by unqualified traders. I should have taken proceedings under this act in the first instance, but for the proviso at the end of section 17. Now that the Bench has decided the case "as not within the meaning of the arsenic act," this proviso cannot now be pleaded, consequently a conviction should follow, and thus set the matter beyond doubt.

This matter is not only important to myself, but to every chemist and druggist in the kingdom, and the question should be now decided, and on this ground may I ask the opinion of the general body of chemists on this subject, as giving a sanction to the proceedings and if needs be of opposing by appeal any decision which may be contrary to our views and expectations, as in the case just decided; every chemist in the country I do not hesitate to say, feels satisfied that sulphide of arsenic must be meant to be included in the act.

I shall be happy to receive communications on the subject from any interested trader, and court full discussion in the matter of our parasitical law breakers.

Apologising for taking up so much of your valuable space,
I am, Sir,

Your obedient servant,
JAMES PHILLIPS.

Church Stretton,
27th August, 1869.

AN INTERNATIONAL PHARMACEUTICAL CONGRESS.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

Sir,—I write under the pressure of an overwhelming sense of debt, which I have no doubt is shared by all members of the British Pharmaceutical Conference who have been present at any of the meetings held at Exeter, Bath, Dundee, Norwich, Nottingham, and Birmingham. Our entertainment at Torquay and Exeter, last month, was such as we can never hope to return. It is all very well for members of the Conference to go from place to place accepting the hospitality of the local chemists, but I do not see that these kind attentions are in any way reciprocated. It may be suggested that the chemists of one town repay the hospitalities of those in another. This argument applies very well so far as regards provincial chemists, but it does not in the least affect the chemists and pharmacists of London, who, being members of the Conference, visit town after town, accept generous and hospitable treatment from their local brethren, without the least chance of being able (except, of course, in their individual and private capacity) to make any return for benefits received. Such a return is rendered the more difficult in consequence of the custom—almost a law—of associating the meetings of the Conference with those of the British Association for the Advancement of Science, which latter society never meets in London.

I think, however, that there is a way out of our difficulty. I would suggest that a National, or, better still, an International Pharmaceutical Congress should be held in London every seventh or tenth year, under the united auspices of the Pharmaceutical Society and the Chemical Conference. The adoption of such a course would give the London members of the Conference an opportunity of returning the attentions of their provincial brethren, and would also be a means of extending that fellowship which should always exist between all those who follow one calling.

The year 1871 would be a favourable time for the first congress, as it would be contemporary with the first Annual

International Exhibition of Works of Art and Industry in this country; and I would suggest that it be held in May, just previously to the Annual General Meeting of the Pharmaceutical Society, so that the Conversazioni usually held on the evening before the annual meeting would form a very fitting finale to the proposed congress. Such an arrangement would bring together chemists and pharmacists from all parts of the kingdom, if not of the world, and would, in those years in which the congress was held, considerably increase the numbers attending the Pharmaceutical Society's annual meeting. Feeling that the adoption of the idea thus roughly thrown out, with such modifications and additions as will arise upon consideration, will greatly tend to the advancement of pharmacy and the benefit of chemists and druggists generally,

I am, Sir,
Yours faithfully,
HENRY MATTHEWS, F.C.S.

60, Gower-street.

COLONIAL CHEMISTS AND THE PHARMACY ACT.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—I have just read the letter in your Journal of May 15, signed E. L. Bailey.

I find myself in the same fix as he is. I was born and bred in England, and was apprenticed for five years with Mr. William March, Newark-on-Trent. I arrived in this country January, 1858, and commenced business in 1859, and am still in business as a dispensing and family chemist, but I find that if I return to England, I am, in consequence of recent legislation, debarred from practising pharmacy there. This appears to me hardly just.

I see a letter in the same number, referring to hair-washes, and their supposed injurious effects. I have sold these articles during the last ten years, and have endeavoured to keep in stock all the articles in this line which are asked for, on the same principle as a bookseller supplies literature, and I have never yet heard of a case wherein the health was injured by their use.

It has sometimes occurred to me, that if a few grains of lead applied to the scalp two or three times a week is injurious, I ought to have been dead and buried long ago, considering that I have drank water daily, during the last ten years, which passes through a leaden pipe from the street main, along the whole length of my store, and which pipe, when it was mended the other day, I noticed very much corroded internally.

Yours, &c., "LINCOLNSHIRE."

Montreal, July 22, 1869.



[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau, Patent Agent, 4, South-street, Finsbury, London; 10, Rue de la Fidélité, Paris; and 3, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following :—

- No. 1950. W. Coleman, of London, and S. Turton, of Heaton Norris, Lancashire, Engineers. Improvements in feeding bottles. Dated 1st July, 1869.
- 2075. J. Walker, of Mansell-street, Aldgate, and P. A. Godfrey, of Temple-road, Homerton-street. The manufacture of new or improved dyes or colouring matter from materials not hitherto used, which patent was granted 1st July, 1869.
- 2137. J. T. A. Mallet, Engineer, of 13, Boulevard St Martin, Paris. A new or improved mode of apparatus for charging atmospheric air with oxygen. Dated 15th July, 1869.
- 2139. J. T. Way, of 9, Russell-road, Kensington. Improvements in the manufacture of hydrochloric acid. Dated 15th July, 1869.
- 2151. F. G. Fleury, of Merrick-square, Southwark, Engineer. Improvements in apparatus for drawing or raising, and forcing liquids. Dated 10th July, 1869.
- 2153. A. Rollason, of 123, Pembroke-road, Clifton, Bristol, Chemist. Improvements in the mode of extracting ammonia, purifying gas liquor, and utilising the same. Dated 16th July, 1869.

No.

2157. H. Mige, of Paris, 70, Boulevard de Strasbourg, Chemist. The preparation and production of certain new animal fatty bodies. Dated 17th July, 1860.

2160. H. E. Newton, of Chancery-lane. Improvements in electro-plate. Dated 17th July, 1860.

2222. J. Rowley, of 75, Wells-street, Camberwell, Chemist. Improvements in the manufacturer of certain coal tar products. Dated 22nd July, 1860.

2233. T. Barnes, of Whitehaven, Cumberland, Merchant. Improvements in the treatment of coal for the removal of the sulphur compounds contained therein. Dated 22nd July, 1860.

2241. J. H. Johnson, of Lincoln's-inn-fields. Improvements in purifying alcohol and paraffin, and in the apparatus employed therein. Dated 23rd July, 1860.

2274. J. Winship, of York. Improvements in the preparation and application of medicaments for internal and external use. Dated 27th July, 1860.

2290. A. Smith, Cleckheaton, and D. Cunningham, Working Chemist, both of Stonehouse, Lancashire. Improvements in treating and refining crude, mineral, petroleum, and other hydrocarbon oils, and in the means of apparatus employed thereto. Dated 29th July, 1860.

2306. B. Goddard, and W. Finley, both of Stockport, Cheshire. Improvements in machinery or apparatus for mixing substances for pills, ointment, and other purposes, and for making pills and globular vehicles of plastic substances. Dated 31st July, 1860.

2324. T. Green, of Birmingham. Improved apparatus for stoppering bottles. Dated 3rd August, 1860.

2331. T. Livesey and T. Abbott, both of Blackburn, Lancaster, Manufacturers. An improved mode of boiling size, and in the apparatus employed therein. Dated 4th August, 1860.

2364. W. E. Newton, of Chancery-lane. An improved process for purifying or disinfecting alcohol and alcoholic liquors. Dated 7th August, 1860.

2384. R. Longdon, of Manchester. Improvements in safes and refrigerators for preserving and cooling food and other articles. Dated 10th August, 1860.

2403. C. H. Whipple, both of Manchester. Druggists, and T. Crossley, of Rochdale, Manufacturing Chemist. Improvements in the manufacture of starch. Dated 11th August, 1860.

2403. A. M. Clark, of Chancery-lane. Improvements in the manufacture of phosphates of ammonia. Dated 11th August, 1860.

Letters Patent have been issued for the following:—

420. J. Clayton, of Radcliffe, Lancaster. An improved paste for fixing and brightening aniline and pigment colours, in printing on paper, cloth, or other materials. Dated 10th Feb., 1860.

434. H. Edwards, of St. Swithin's Inn, Holborn. An improved preserved food. Dated 12th February, 1860.

445. W. Summers, of Bristol, Soda Water Manufacturer. Improvements in packing-cases for packing, storing bottles of mineral waters and other bottles. Dated 12th February, 1860.

460. L. N. Lawrence, of Worcester, England. Improvements in the preservation and disinfection of animal and other substances, and in the apparatus employed therein. Dated 15th February, 1860.

542. J. O. C. Phillips, of Birmingham, Dentist. An improvement or improvements in the construction of sets or partial sets of artificial teeth. Dated 16th February, 1860.

574. J. Vaughan of Mitre lane, near Newgate, London, Chemist. Improvements in treating, converting, and utilising the metallic salts and sulphuric acid contained in or delivered from the residual or waste liquors of tin-plate works and petroleum and paraffin refineries. Dated 22nd February, 1860.

613. F. Roseau, of Paris. An improved mode of and apparatus for fixing the lid and the bottom of tin canisters, preserve and other boxes, to the body of them. Dated 1st March, 1860.

732. W. Weldon, of Park Villa, West-hill, Highgate. Improvements in obtaining certain compounds of manganese from chlorine residues in the manufacturing chloride by means thereof, and in apparatus and arrangements for these purposes. Dated 10th March, 1860.

1442. B. Latham, of 6, Westminster Chambers, Civil Engineer. Improvements in ventilators for sewers, also applicable for deodorizing noxious gases, arising in the processes of certain manufactures. Dated 11th May, 1860.

1468. T. G. E. Dolby, of Forest-gate, Essex. Goldsmith. An improved apparatus or vase suitable for the admission of air to feeding bottles and other useful purposes. Dated 13th May, 1860.

1642. J. Bronner and H. Gutzkow, both of Frankfurt-on-the-Maine, Germany. A new method of obtaining an anthracene out of asphaltum, that is to say, pitch produced from coal tar, and of preparing two colouring matters from the anthracene. Dated 25th May, 1860.

1790. G. Fry, of Ethelwold House, Bishopsgate-street, Within, Timber. An improved process in the treatment of wood for obtaining silver for the manufacture of silver and other articles, for the production of acid, spirit, ether, rosin, and other substances, or liquids from wood, and in machinery or apparatus therefor. Dated 10th June, 1860.

1850. G. W. Fox, of Market Colliery Furnishers. Improvements in the manufacture of castor, cod-liver, and other medicinal oils, and in the apparatus to render the same more palatable. Dated 16th June, 1860.

1863. W. R. Lake, of Southampton-buildings, Chancery-lane. An improved process for preparing sulphates, and obtaining fine silver therefrom. Dated 17th June, 1860.

1918. W. H. Perkin, of Sudbury. Improvements in the manufacture of colouring matter suitable for dyeing and printing. Dated 29th June, 1860.

Patents which have become void:—

2050. W. Gossage, of Widnes, Lancaster, Chemist. An improved method of, and apparatus for, decomposing chloride of sodium and chloride of potash for the production of compounds of soda and potash. Dated 18th July, 1862.

No.

2062. A. Cotelle, of St. Quentin, France, Distiller. Improvements in the manufacture of alcohol. Dated 10th July, 1860.

2326. J. G. Tongue, of Southampton-buildings, Chancery-lane. Improvements in processes and apparatus for extracting the natural wax or fatty matters from wool, hair, or other animal or vegetable substances containing the same, used in the application thereof to various purposes. Dated 29th August, 1862.

1885. R. Irvine, of Magdalene-hill, Midlothian, North Britain, Soap and Candle Manufacturer. Improvements in the treatment of certain residues in soap-making. Dated 19th July, 1866.

1950. A. J. Mathews, of 15, Passage des Petites Ecuries, Paris, Medical Doctor. An improved apparatus for irrigating the intestines, the vagina, the bladder, the brain, the eyes, and eyelids. Dated 27th July, 1866.

1956. P. Grice, of Burton-on-Trent, and H. Caro, of Manchester, Chemist. Improvements in the preparation of bodies in which nitrogen is absorbed from the atmosphere. Dated 27th July, 1866.

2007. J. H. Johnson, of Lincoln's-inn-fields. Improvements in the mode of securing corks and stoppers in the necks or mouths of bottles, jars, and other vessels. Dated 3rd August, 1863.

2043. K. F. Fenton, of Newton Heath, Lancaster, Manufacturing Chemist. Improvements in the production of sal ammoniac in a commercial form. Dated 5th August, 1863.

2066. W. Clark, of Chancery-lane. Improvements in the utilization of chloride of manganese (residue of the manufacture of chlorine), in the manufacture of peroxide of manganese, chlorine, and hydrochloric acid, and in apparatus for the same. Dated 11th August, 1866.

2110. G. Payne, of Belmont Works, Battersea. Improvements in treating fatty and oily matters. Dated 16th August, 1866.

2115. A. Parfet, of Manchester, Chemist. Improvements in the use and application of an inorganic glycerine ether. Dated 17th August, 1866.

Specifications published during the month. Postage lsd. extra:—

1863.

3695. A. C. Sterry, F. Lambe, and J. Fordred. Treating and purifying manafin, &c. 8d.

3772. J. H. Johnson. Preserving meat, &c. 10d.

3780. Z. Poljair. Safety stopper for bottles, &c. 8d.

3787. W. F. Stanley. Machines for exciting frictional electricity. 8d.

3850. T. B. Hubbell. Bandage for females. 4d.

3924. J. H. Johnson. Plates for artificial teeth. 4d.

3928. J. H. Newton. Treatment of liver oil, &c. 4d.

3937. J. Mason. Cupping bottles, jugs, &c. 4d.

3937. T. F. Henley. Extracting colouring matters from stick or gum lac. 4d.

3973. H. H. Bigg. Artificial legs. 4d.

3984. D. Spill. Producing compounds containing xyloiodine. 4d.

1869.

9. F. Perry. Preserving animal and vegetable substances, &c. 6d.

22. J. Williams, H. Trigg, and W. White. Manufacture of white lead. 4d.

26. W. Prosser. Purifying and bleaching oils, gums, resins and spirits. 4d.

32. A. Mason. Distilling hydrocarbon oils. 4d.

42. K. Walter. Manufacture of sulphuric acid. 4d.

44. W. Piddington. Extracting scented essences oil from plants. 4d.

51. J. H. Johnson. Concentrated foot tablets. 4d.

83. A. F. Price. Producing colours from naphthaline. 4d.

93. C. J. Günther. Salting and preserving meat. 4d.

130. P. Spencer. Producing sulphate of potash for manufacturing alum. 4d.

134. A. H. Durant. Manufacture of castor oil, &c. 4d.

148. E. Braby. Manufacture of sulphate of ammonia. 4d.

439. H. B. Binko. Manufacture and application of indigo, carmine, &c. 4d.

Varia.

ESSENCE OF MUSK.

We extract the following from the *Pharmacist* (Chicago):—Take of grain musk, one troy ounce; distilled water (boiling), half-pint. Digest them together in a close vessel, with frequent agitation, until quite cold; then add of alcohol three and a half pints; water of ammonia ('880), half fluid ounce. Having closely corked or stopped the vessel, and secured it over with bladder, digest the whole for one or two months, with frequent agitation, in a room exposed to the sun in summer, or in an equally warm situation in winter. Lastly, after repose, decant the clear portion, and filter it if necessary. A little essence of ambergris is commonly added to the filtrate, one or two drachms may be put into the vessel before closing it, and after adding the spirit. This makes a very fine preparation. The residue can be used for an article of inferior quality. Ammonia is added to increase the solvent power of the spirit and the intensity of the odour. Sometimes carbonate of potash is employed for the same purpose, but its use is not judicious, because it has a tendency to produce partial decomposition of the mixture. For the sake of economy the musk may be rubbed down with powdered glass or lump sugar, which makes the extraction more complete.

ALTHOUGH we have hitherto refrained from commenting upon the New Bankruptcy Act, we have watched its passage through the Legislature with a considerable amount of interest, and now that it has become law we shall watch the result with an equal interest and with no little confidence. The existing state of our bankruptcy regulations, at the period when these were last taken in hand, offered, in one sense, the most promising field for the exercise of statesmanship which could be found in a civilised country. It might be safely assumed, that while it was possible to confer a great benefit on the commercial world, it was nearly, if not quite, impossible for human ingenuity, or stupidity, to devise a system which should work with greater injustice, or produce more anomalous results than we were already accustomed to. The majority of our contemporaries, in remarking upon the new enactments, persist in regarding them as an extensive and somewhat dangerous experiment. And we have frequently noticed how universal the custom obtains among journalists as well as novelists to look on the hardships of insolvency purely from the debtor's point of view. We should be sorry to draw a too sweeping inference from such a tendency, but we are glad that at least among our lawyers there are signs of recovery from this sentimental weakness, which, until recently, seemed also to have extended to them. Surely creditors are at least as good citizens as debtors, and ought to have their interests as carefully considered; and yet, up to this day, they are subject to a conspiracy which robs them legally, and compels them to suffer for other men's blunders or frauds. Even in those very rare cases where insolvency may be traced to pure misfortune, it is hardly reasonable that these misfortunes should be forced on others, for the law has no right to demand generosity.

The new Act will come into operation on the 1st of January, 1870, and we intend to take an early opportunity of placing its provisions more in detail before our readers. From that date all previous statutes on bankruptcy will be abolished; and, though we do not look for an immediate reign of commercial honesty, we do perceive that a very wide door for rogues has been closed, or, at least, that the law has offered the honest men of business the opportunity of closing it. The most important provisions of this Act are the reconstruction and reformation of the Courts themselves; the appointment, by the creditors, of a trustee who shall, in their interests, wind up and make the most of the estate or business of the bankrupt; the prohibition of a person becoming a bankrupt on his own petition; and the refusal to grant a discharge until at least ten shillings in the pound has been paid. That is, in case the trustee shall not be able to secure for those for whom he acts a dividend amounting to this, the Court will protect the bankrupt for three years after the release of said trustee; but by the expiration of that time he must have paid that proportion in all, unless by special resolution the creditors shall ask for and the Court shall sanction his discharge, he will then be liable to be proceeded against for the balance of unpaid debts as for judgment debts, under certain restrictions and with the sanction of the Court. Add to this that provision is made for strict surveillance, and that, under another Act, severe punishment is threatened for fraudulent debtors, and we think the trip to Basinghall-street will be scarcely so merry for some of our easy-principled friends as heretofore. Of course, much will rest with creditors; but they will not be hedged about with obstacles, as before, and we are sure that public opinion will be an ample guarantee against undue severity on their part.

The reports of the harvest appear to be most satisfactory,

and simultaneously we have most favourable news of the continued improvement of commercial prospects. There has been a considerable amount of business done in chemicals, and for the first time for many months manufacturers seem to agree in reporting increased trade. Prices for chemicals are generally a shade higher. In the drug market there has been but little variation, and a steady trade has been the general characteristic of the Mincing-lane markets. Opium is much lower again, and is likely to remain at moderate rates, as will be seen from the following quotation from Mr. Heftter's circular, dated from Smyrna on the 28th ult. :-

"In consequence of continual heavy supplies from the interior and a total cessation of demand, the high prices that were paid for Opium at the beginning of this month have been maintained for a very short time, after which the article has rapidly receded to 225 piastres for current quality. Only of late it has resumed its former activity, but in spite of the extensive scale on which purchases have taken place, prices have been ruling rather irregular between 222 and 230 piastres (26/7 and 27/6 lb. f. o. b.), and the market is certainly far from closing strong at this latter figure.

"Sales, 544 baskets, at from 235 to 222 piastres.

"Stock, 568 baskets."

We have before us the report of a curious and rather incomprehensible fraud from America. If this report is correct—the *New York Druggist's Price Current* is our authority—it would appear that the well-known labels of H. G. Hotchkiss on bottles of oil of peppermint are no sort of guarantee that the oil is really of that manufacture, and this, not because other makers pirate H. G. Hotchkiss's brand, but because for some paltry consideration he himself thinks proper to sell the use of his name to anyone who will buy it. The system, which his agents, Paine, Horner, and Mulford, of 88, William-street, New York, openly explain in the columns of our contemporary, is this—that large quantities of oil of peppermint are sent to them merely for bottling, and afterwards turned out with the following label:—

INTERNATIONAL PRIZE MEDAL
OIL OF PEPPERMINT

MANUFACTURED BY
H. G. HOTCHKISS

LONDON

WAYNE CO. NEW YORK U.S.A.

Suppose Mr. H. G. Hotchkiss receives a dollar for each bottle thus sent out, and presuming also that lies may be considered to be fairly remunerated at the rate of a dollar apiece, we still cannot credit the proprietor with much business cleverness in thus committing suicide with a name which might have been a handsome property for many generations.

The flower crops do not seem to have been so fortunate generally as the cereals this year. We hear that both Roses and Geraniums will be scarce, and that we may therefore look for considerable advances in the value of their Ottos. Arnica flowers have also been much injured by weather, and are likely to be comparatively scarce. A considerable advance has occurred in the price of Saffron. Gum Arabic is the turn cheaper, but meets with good demand at a slight decline. Myrrh of new importation has brought about previous value, and Olibanum is rather dearer and in excellent request. Nutmegs and Mace are again higher. Castor Oil is a shade cheaper, unless of best quality. Markets are reported full for Camphor, Cubes, Cologyn, Gum Assafetida, and Dragons' Blood, and scarce in Ammoniacum, Nux Vomica, Tinnevelly Senna, Calisaya Bark, and Jamaica Sarsaparilla.

In Oils, Linseed is cheaper, with a very dull demand. Rapeseed has advanced, in consequence of large Continental inquiries. Olive Oils are a little higher. There is a better demand for Sperm Oil. Turpentine is sluggish with retail sellers at 26s. 9d. Petroleum is easier in price, but transactions have been very limited.

Dyes and Drysalteries have, like the chemical markets, been fairly active. Turmeric is scarce and much wanted. Large business has been done privately in Safflower, at irregular but high prices. Cochineal has been steady; and Cutch, though not in large demand, is still firm. The quotations following are corrected up to the 11th inst.

See page 10 for the complete list of articles mentioned in this column.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

CHEMICALS.

	1869.				1868.			
	May				May			
	a.	d.	a.	d.	a.	d.	a.	d.
Acetic.....per lb.	0	4	0	0	0	4	0	0
Citric.....per lb.	2	55	2	75	2	8	2	8
Nitric.....	0	5	0	55	0	5	0	55
Oxalic.....	0	75	0	85	0	85	0	85
Sulphuric.....	0	75	0	95	0	95	0	95
Tartaric crystal.....	1	0	0	0	1	0	0	1
powdered.....	1	25	1	3	1	2	0	0
ANTIMONY ore.....per ton	260	0	280	0	280	0	300	0
crude.....per cwt	32	0	0	0	23	0	0	0
Metals.....	51	0	51	0	45	0	0	0
star.....	16	0	16	6	16	0	16	6
ASBENIC, lump.....	7	3	7	6	7	6	0	0
powder.....	10	6	11	0	10	6	0	0
BRIMSTONE, rough.....per ton	165	0	0	0	137	6	0	0
diamond.....per cwt	13	0	13	0	14	6	0	0
IODINE.....dry.....per oz.	0	94	0	10	0	98	0	10
IVORY BLACK, dry.....per cwt	0	0	0	0	1	6	1	8
MAGNEA, calcined.....per lb.	1	2	0	0	1	6	0	0
MERCURE, red.....per bottle	137	0	138	0	137	6	0	0
MINUM, red.....per cwt	26	0	21	0	21	0	25	0
orange.....	31	6	32	3	33	0	0	0
PRECIPITATE, red.....per lb.	2	6	0	0	2	5	0	0
white.....	2	5	0	0	2	5	0	0
PRUSSIAN BLUE.....	0	0	0	0	1	0	1	10
SALTS—								
Album.....per ton	145	0	150	0	150	0	155	0
Ammonia powder.....	165	0	170	0	170	0	175	0
Ammonia:								
Carbonate.....per lb.	0	05	0	6	0	5	0	5
Hydrochlorate, white.....	480	0	560	0	429	0	500	0
British (see Sal Ammoniac).....								
Sulphate.....per ton	330	0	0	0	300	0	310	0
Argol, Cape.....per cwt	65	0	65	0	75	0	75	0
France.....	45	0	58	0	45	0	60	0
Spittoon, red.....	22	0	24	0	25	0	27	0
Sulphur, red.....	52	0	55	0	55	0	55	0
Naples, white.....	55	0	65	0	55	0	65	0
Florence, white.....	0	0	0	0	75	0	75	0
red.....	0	0	0	0	66	0	65	0
Bologna, white.....	0	0	0	0	0	0	0	0
Ashes (see Potash and Soda).....								
Bleaching powd., per cwt.	9	3	0	0	11	0	11	3
Borax, crude.....	25	0	40	0	25	0	35	0
(Tincal).....	45	0	50	0	39	0	50	0
British refined.....	69	0	70	0	2	6	0	0
Calomel.....per lb.	2	5	0	0	2	5	0	0
Copper:								
Sulphate.....per cwt.	23	6	24	0	23	6	24	0
Copperas, green.....per ton	52	6	60	0	55	0	60	0
Corrosive Sublimate.....p. lb.	1	11	0	0	1	11	0	0
Cr. Tartar, French, p. cwt.	83	0	0	0	85	0	85	0
Venetian grey.....	0	0	0	0	0	0	0	0
brown.....	65	0	75	0	60	0	75	0
Epsom Salts.....per cwt.	7	6	8	0	8	0	9	0
Glauber Salts.....	4	6	6	0	5	6	6	0
Lime.....								
Acetate, white, per cwt.	12	6	23	0	11	6	21	6
Magnesia:								
Carbonate.....	42	6	0	0	42	6	0	0
Potash:								
Bichromate.....per cwt.	0	5	0	0	0	5	0	0
Chromate:								
Portuguese, British Columbia, Canada, Icat sort.....per cwt.	31	0	0	0	32	6	33	0
Pearlashes, Canadian, gal. sort.....per cwt.	32	0	0	0	33	6	0	0
Chlorate.....per lb.	0	11	0	0	1	1	0	0
Prussiate.....per lb.	0	11	0	0	1	0	0	0
red.....	1	8	1	10	1	9	1	10
Tartare (see Argol and Cream of Tartar).....								
Potassium:								
Chloride.....per cwt.	8	0	0	0	8	3	0	6
Iodide.....per cwt.	12	0	0	0	12	6	0	0
Quinine:								
Sulphate, British, in bottles.....per oz.	5	9	0	0	4	9	0	0
Sulphate, French.....	5	5	0	0	4	2	0	4
Sulphates.....per lb.	0	10	0	0	0	9	0	0
Sulphuric Acidic, Brit. cwt.	83	0	0	40	35	6	37	6
Sulphurite:								
Bengal, 6 per cent. or under.....per cwt.	22	0	22	6	18	5	18	9
Bengal over 6 per cent. per cwt.	21	3	21	9	18	6	19	0
Madras.....	0	0	0	0	0	0	0	0
Bombay & Kurrachee p. cwt.	0	0	0	0	0	0	0	0
European.....	0	0	0	0	0	0	0	0
British, refined.....	26	0	25	6	22	6	23	6
Soda Bicarbonate, p. cwt.	10	0	0	0	11	6	0	0
Carb. Soda.....								
Cards Ash, per deg.	0	13	0	0	0	13	0	0
Soda Crystals per ton.	82	6	0	0	82	6	0	0

	1869.				1868.			
	s.	d.	s.	d.	s.	d.	s.	d.
Soda:								
Hyposulphite.....per cwt.	16	0	18	0	22	0	0	0
Nitrate.....	16	9	17	3	11	0	12	6
SODA OF LEAD, White, cwt.	40	0	42	0	37	4	38	0
Brown.....	29	0	30	0	27	..	27	..
SULPHUR (see Brimstone)								
Verdigre.....per lb.	1	0	1	2	0	11	..	1
Vermilion, English, per lb.	2	6	3	0	2	10	..	2
China.....	2	9	0	0	2	7	..	2
DRUGS:								
ALOES, Hepatic, per cwt.	80	9	180	0	100	0	180	0
Sootrine.....	129	0	300	0	170	0	300	0
Inferior.....	28	0	32	0	28	0	31	0
Barbadous.....	15	0	28	0	16	0	28	0
BALSAMS:								
Canada.....per lb.	1	2	0	0	1	2	..	1
Caspivi.....	1	9	12	0	8	9	9	0
Peru.....	11	9	12	0	2	6	..	0
Tolu.....	2	3	0	0	0	0	0	0
BANKS:								
Canella alba.....per cwt.	24	0	38	0	30	0	38	0
Cascara.....	26	0	36	0	23	0	35	0
Peru, crown & grey per lb.	6	9	2	3	6	10	1	2
Calisaya, the quill.....	3	0	3	2	2	6	2	9
Carthagenae.....	0	9	1	8	0	9	8	6
Fitayo.....	0	6	1	5	0	8	8	6
Reato.....	2	0	0	0	1	9	0	6
Bachoo Leaves.....	0	2	0	0	0	24	0	12
CAMPHOR, Japan, per cwt.	97	0	180	0	130	0	180	0
CHAMOMILE, French, p. cwt.	50	0	90	0	55	0	90	0
CASTORUM, Brazil, per lb.	0	0	32	0	0	0	32	0
DRAGO'S BLOOD, resin p. cwt.	100	0	160	0	100	0	200	0
lump.....	100	0	200	0	100	0	240	0
FRUITS AND SEEDS (see also Seeds and Spices)								
Anise, China Star pr. wt.	105	0	110	0	85	0	90	0
German, &c.....	25	0	38	0	34	0	40	0
Beans, Tonquin.....per lb.	1	0	1	6	1	2	1	6
Cardamoms, Malabar, good.....								
inferior.....	7	4	7	9	8	9	8	6
Macras.....	5	6	7	6	4	9	4	8
Ceylon.....	2	8	3	1	2	6	2	9
Coco Nuts.....per cwt.	15	0	18	0	12	0	17	0
Castor Oil, Florida.....	36	0	40	0	35	0	40	0
Castor Oil, India.....	35	0	40	0	35	0	40	0
Guinea Grains.....	36	0	40	0	45	0	45	0
Juniper Berries.....	7	0	8	0	14	0	10	0
Myrtilles.....	8	0	10	0	12	0	12	0
Nux Vomica.....	8	0	10	0	12	0	12	0
Tamarihi, East India.....	11	0	12	0	23	0	32	0
West India, new.....	12	0	22	0	22	0	22	0
Vanilla, large, per lb.	21	0	25	0	9	6	14	0
Wormwood, inferior, per cwt.	25	0	30	0	25	0	30	0
GINGER, Preserved, in boxes (duty 1d. per lb.)	0	6	0	7	0	6	..	10
GINGER, preserved, in boxes (duty 1d. per lb.)	0	6	0	7	0	6	..	10
HONEY, Narbonne.....	0	0	0	0	0	0	0	0
Java.....	21	0	36	0	21	0	36	0
Jamaica.....	25	0	45	0	24	0	45	0
IPERA CAUCHA.....	5	3	5	6	7	6	6	0
LSINGGLASS, Brazil.....	2	6	4	7	2	9	4	7
Tongue sort.....	3	1	5	0	4	9	5	7
East India.....	2	0	4	4	2	3	4	4
Rice, long staple.....	5	0	5	0	3	1	4	4
"leaf.....	3	0	5	9	5	6	5	6
"leaf.....	1	6	2	6	1	6	0	0
JALAP, Food.....	3	2	4	0	3	9	4	6
infer. & dars.....	0	0	0	0	0	0	0	0
LEMON JUICE, per degree.....	0	1	0	0	0	14	0	3
LIQUORICE, Spanish per cwt.	63	0	65	0	60	0	70	0
Italian.....	48	0	67	0	50	0	60	0
MANNA, flaky.....per lb.	2	0	2	6	1	6	1	9
SESAME, per lb.	16	0	23	0	20	0	40	0
MUSK, per oz.	0	3	0	4	0	3	0	4
OILS (see also separate List)								
Almond, expressed per lb.	1	7	0	0	1	7	0	0
Castor, 1st pale.....	0	53	0	0	0	52	0	0
"2nd pale.....	0	43	0	0	0	55	0	0
infr. & dark.....	0	0	0	0	0	0	0	0
Bombay (in cases).....	0	43	0	0	0	42	0	0
Cod Liver.....per gall.	5	0	7	0	7	0	7	0
Croton.....per gall.	0	3	0	4	0	3	0	4
Essential Oils:								
Almond.....per lb.	42	6	0	0	40	0	0	0
Anise.....per lb.	8	6	0	0	9	0	0	0
Bay.....per cwt.	65	0	70	0	75	0	70	0
Bergamot.....per lb.	8	0	15	0	12	0	23	0
Cajeput, (in bond) per oz.	0	18	0	0	0	12	0	0
Caraway.....per lb.	0	12	0	0	0	12	0	0
Cassia.....	4	10	0	0	5	9	5	6
Chamomile.....per oz.	1	0	4	0	1	0	4	0

	1869.			1868.				1869.			1868.		
Essential Oils, continued:—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	Oils, continued:—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Cinnamon-leaf . . . per oz.	0 4	..	0 0	0 1	..	0 2	WHALE, South Sea, pale	43 10	..	44 0	37 10	..	38 0
Citronelle	0 24	..	0 24	0 23	..	0 24	“ “	38 0	..	37 0	36 0	..	36 0
“ fine ”	0 3	..	0 3	0 31	..	0 0	“ brown ”	34 0	..	32 0	33 6	..	34 0
Clove.....per lb.	2 0	..	0 0	2 0	..	0 0	East India, Fish	32 0	..	31 0	31 0	..	31 0
Juniper.....	1 3	..	1 0	1 9	..	2 0	OLIVE, Galipoli	58 0	..	0 0	68 0	..	0 0
Lavender.....	1 3	..	1 0	4 3	..	2 9	Trieste	57 0	..	0 0	67 0	..	0 0
Rosemary.....	1 1	..	1 0	3 0	..	3 0	Levant	52 10	..	0 0	62 0	..	0 0
Sassafras.....	1 0	..	1 0	4 6	..	4 0	Mogador	51 10	..	52 0	61 10	..	61 0
Spearmint	4 0	..	1 8	0 0	12 0	Spanish	55 0	..	56 0	64 10	..	67 0	
Thyme.....	1 10	..	2 0	1 10	..	4 0	Sicily	55 0	..	0 0	65 0	..	0 0
Mace, expressed	per oz.	0 1	..	0 2	0 0	0 0	COCONUT, Cochin, per ton	44 0	..	0 0	53 0	..	0 0
ORUUM, Turkey	per lb.	26 0	..	25 0	24 0	0 0	Ceylon	42 0	..	42 10	51 0	..	50 0
Quassia (bitterwood) per ton	18 0	..	18 0	25 0	0 0	Sydney	36 0	..	42 0	45 0	..	50 0	
RHUBARB, China, good and fine	per lb.	16 0	..	125 0	125 0	0 0	GROUPED NUT AND GINGELLY:—						
Good, mid, to ord.	4 6	..	9 3	5 0	..	9 0	Bonney	0 0	..	0 0	0 0	..	0 0
Dutch trimmed	10 0	..	0 0	10 0	..	12 0	Madras	40 0	..	41 0	40 0	..	41 0
Russian	0 0	..	0 0	0 0	..	10 0	PALM, fine	43 0	..	0 0	41 0	..	0 0
ROOTS, Calamus, per cwt.				50 0	..	20 0	LINSEED	31 10	..	31 15	31 5	..	31 10
China	27 0	..	35 0	30 0	..	35 0	RAPESEED, English, pale	42 0	..	42 10	33 0	..	0 0
Galangal	15 0	..	20 0	16 0	..	18 0	brown	39 10	..	0 0	31 10	..	0 0
Gentian	19 0	..	20 0	16 0	..	17 0	Foreign pale	43 10	..	44 0	35 0	..	35 10
Hellebore	23 0	..	30 0	22 0	..	30 0	brown	40 0	..	31 10	30 0	..	0 0
Origanum	38 0	..	44 0	40 0	..	42 0	COTTONSEED	33 0	..	39 5	33 0	..	32 0
Barberry	58 0	..	60 0	58 0	..	60 0	LARD	76 0	..	0 0	64 0	..	66 0
Pink	0 5	..	0 10	0 4	..	0 10	TALLOW	35 0	..	0 0	37 0	..	0 0
Rhatany	0 5	..	0 10	0 4	..	0 10	TURPENTINE, American, cks.	26 9	..	0 0	27 0	..	28 0
Seneka	1 6	..	0 0	1 6	..	0 0	PETROLEUM, Crude	14 0	..	0 0	11 10	..	0 0
Snake	1 0	..	0 0	1 6	..	0 0	s. d. refined, per gall.	1 7	..	1 5	1 0	..	1 0
SAFFRON, Spanish	30 0	..	38 0	32 0	..	35 0	Spirit	0 9	..	0 0	0 9	..	0 0
SANASAPARILLA, Lima per lb.	110 0	..	120 0	90 0	..	110 0	s. d. SEEDS:—				s. d. s. d. s. d. s. d.		
PARAS., 1st qual.	1 0	..	1 3	1 0	..	1 3	CANARY	62 0	..	72 0	78 0	..	80 0
Honduras	1 2	..	1 6	1 0	..	1 4	CARAWAY, English per cwt.	48 0	..	52 0	50 0	..	50 0
Jamaica	1 9	..	2 6	1 2	..	1 6	GERMAN, German	39 0	..	53 0	36 0	..	42 0
SASSAFRAS	28 0	..	34 0	28 0	..	35 0	CORIANDER	20 0	..	21 0	18 0	..	20 0
SENA, Vicksburg	18 0	..	14 0	15 0	..	0 0	HEMP, English per qr.	44 0	..	44 0	42 0	..	44 0
second & ordinary	0 3	..	0 25	0 53	..	0 0	LINSEED, English per qr.	0 0	..	0 0	0 0	..	0 0
TINNIVILLE	0 2	..	0 11	0 2	..	0 10	Black Sea & Azof	57 6	..	57 0	61 6	..	60 0
Alexandria	0 10	..	1 8	0 6	..	0 0	Calcutta	62 6	..	0 0	62 6	..	0 0
SFERMACETI, refined	1 4	..	1 5	1 5	..	0 0	Bombay	63 6	..	0 0	57 0	..	0 0
American	1 4	..	0 0	1 4	..	1 5	S. Pet. St. Petersburg	54 0	..	57 0	55 0	..	0 0
SQUILL	0 1	..	0 24	0 1	..	0 24	POPPY, East India per qr.	56 9	..	57 0	57 0	..	13 0
GUMS.													
AMMONIACIC drop	210 0	..	280 0	200 0	..	260 0	CASSIA, LEMON	128 0	..	136 0	125 0	..	133 0
ANINI, fine washed	120 0	..	200 0	140 0	..	180 0	Vera	45 0	..	55 0	60 0	..	84 0
ANINI, boldscraped	200 0	..	340 0	210 0	..	260 0	Buds	150 0	..	180 0	140 0	..	155 0
sorts	100 0	..	190 0	120 0	..	185 0	CINNAMON, Ceylon, 1st quality	2 5	..	3 9	2 3	..	3 5
dark	80 0	..	110 0	70 0	..	100 0	2nd do.	1 10	..	3 7	1 10	..	2 11
ARABIC, E. I., fine pale picked	78 0	..	82 0	80 0	..	85 0	3rd do.	1 7	..	3 5	1 6	..	2 7
“ to fin ”	62 0	..	75 0	55 0	..	75 0	THYMUS, Malabar	0 0	..	0 0	0 1	..	0 1
garblings	40 0	..	60 0	40 0	..	50 0	CLOVES, Penang	0 0	..	0 4	0 12	..	0 11
TURKEY, pick, gd to fin., second & inf.	170 0	..	220 0	170 0	..	210 0	Zanzibar	0 3	..	0 0	0 34	..	0 4
“ in sorts ”	70 0	..	100 0	68 0	..	87 0	Ord. to good	37 0	..	100 0	90 0	..	140 0
Gedda	38 0	..	45 0	47 0	..	57 0	African	24 6	..	25 0	23 0	..	24 0
BARYBARY, white	83 0	..	85 0	72 0	..	75 0	Borneo	29 0	..	37 0	25 6	..	26 0
hyrcan	57 0	..	62 0	72 0	..	75 0	Malabar	0 0	..	0 0	0 0	..	0 0
AUSTRALIAN	25 0	..	50 0	35 0	..	45 0	Cochin	38 0	..	120 0	40 0	..	120 0
ASSAFETIDA, com. to gd	22 0	..	85 0	55 0	..	105 0	PEPPER, Bk. Malabar, perl.	0 5	..	0 0	0 50	..	0 45
BENJAMIN, 1st qual.	240 0	..	500 0	250 0	..	660 0	White, felliacherry	0 5	..	0 6	0 5	..	0 6
2nd	140 0	..	220 0	140 0	..	240 0	Cayenne	0 4	..	0 4	0 8	..	0 8
“ 3rd ”	50 0	..	120 0	60 0	..	110 0	MEX., 1st quality	9 6	..	4 2	2 9	..	3 6
COPAL, Angola	100 0	..	175 0	65 0	..	70 0	2nd & inferior	9 6	..	3 4	1 6	..	2 7
Benguela	100 0	..	170 0	65 0	..	70 0	NUTMEGS, 75 to 80 to lb.	2 10	..	4 4	2 0	..	2 0
Sierra Leone, per lb.	0 5	..	1 4	1 5	..	1 4	92 to 90	2 3	..	6 2	9 1	..	1 0
Manilla	per cwt.	32 0	..	50 0	26 0	92 to 95	1 8	..	2 2	1 2	..	1 0	
DAMMAR, pale	95 0	..	120 0	87 0	..	95 0	VARIOUS PRODUCTS.						
EPICARUM	15 0	..	16 0	18 0	..	20 0	COCHINEAL—						
GALBANUM	220 0	..	250 0	240 0	..	280 0	Honduras black	2 10	..	4 0	3 2	..	4 5
GANGDOR, pok'd pipe	300 0	..	380 0	240 0	..	320 0	“ pasty ”	2 7	..	3 0	3 0	..	3 9
GUAIACUM	0 8	..	0 0	0 0	..	0 0	“ silver ”	2 4	..	2 5	1 9	..	2 9
KINO	65 0	..	140 0	100 0	..	150 0	Mexican, black	3 0	..	3 2	3 2	..	3 4
KOWRIE, rough	47 0	..	60 0	33 0	..	43 0	Tenerife, black	2 10	..	4 0	2 0	..	3 0
“ strated ”	63 0	..	112 0	45 0	..	100 0	“ silver ”	2 8	..	2 10	3 1	..	4 2
MASTIC, pok'd pipe	5 0	..	5 6	5 0	..	7 0	PUMICE STONE	120 0	..	160 0	120 0	..	160 0
MYRRH, gd & fine per cwt.	20 0	..	250 0	210 0	..	210 0	SOAP, Castile	35 0	..	0 0	38 0	..	39 0
sorts	90 0	..	170 0	80 0	..	140 0	SPONGE, Turk, fin pkd prlb. 12 lb.	16 0	..	16 0	12 0	..	14 0
“ yellow to tinged ”	37 0	..	80 0	32 0	..	35 0	Ordinary	4 0	..	11 0	5 0	..	6 0
brown	33 0	..	81 0	31 0	..	31 10	Bahama	1 0	..	3 6	2 0	..	0 0
SPERM, body	90 0	..	92 0	88 0	..	89 0	“ S. ”	0 6	..	2 6	0 8	..	1 0
bodymattoor	0 0	..	0 0	0 0	..	0 0	Logwood, Campeachy	10 0	..	10 0	10 0	..	10 0
OILS.							Honduras	6 10	..	0 0	4 10	..	5 15
SEAL, pale	per tun £10	6	..	36 0	..	0 0	St. Domingo	6 0	..	6 0	10 0	..	4 10
yellow to tinged	37	..	39 0	32 0	..	35 0	Jamaica	6 0	..	6 0	10 0	..	4 10
brown	33	..	34 0	31 0	..	31 10	Fustic, Cuba	7 15	..	8 10	8 0	..	9 5
RED SANDERS	90 0	..	92 0	88 0	..	89 0	“ S. ”	4 12 6	..	6 0	6 15	..	7 10
SPAN., BIMAS, &c.	0 0	..	0 0	0 0	..	0 0	Savanna	0 0	..	0 0	0 0	..	6 5
“ bodymattoor ”	115 0	..	210 0	150 0	..	200 0	Locwood, Campenay	10 0	..	10 0	10 0	..	10 0
“ in sorts ”	115 0	..	210 0	150 0	..	200 0	“ Honduras ”	6 10	..	0 0	4 10	..	5 15
“ OILS. ”							“ St. Domingo ”	6 0	..	6 0	10 0	..	4 10
“ Seal, pale ”							Jamaica	6 2 0	..	6 10	4 5	..	4 10
“ yellow to tinged ”							Fustic, Cuba	6 0	..	6 10	4 5	..	4 10
“ brown ”							“ S. ”	8 0	..	0 0	7 0	..	7 5
“ SPERM, body ”							“ S. ”	8 0	..	9 10	9 0	..	13 0